SCIENCE

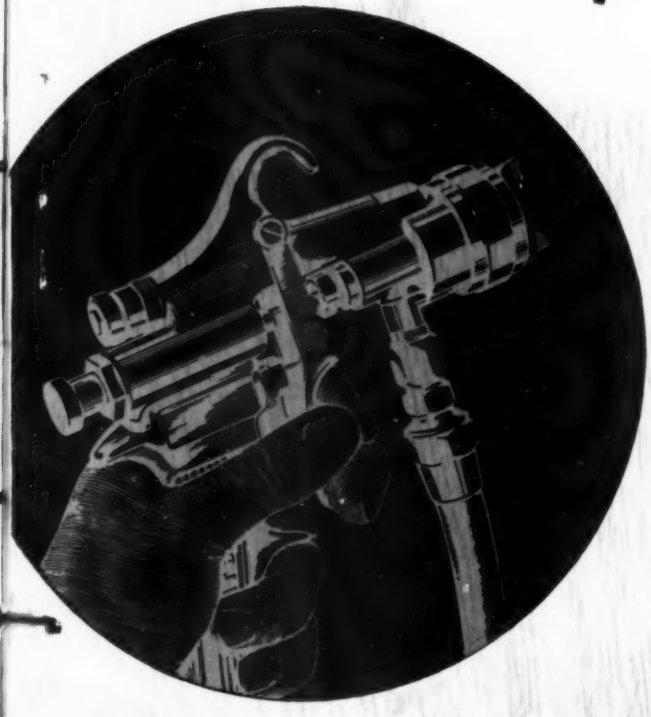
HITCHCOCK'S

wood working digest

PARTNERS WITH THE INDUSTRY FOR MORE THAN 60 YEARS

AUGUST · 1960

Serial Dept.
AUG 1 8 1960



FINISHING DEPT. —
How Bassett Standardizes

Also: —NAFM SECOND LOOK
HINES CONVERTS SCRAP
DOUBLE END TENONER—Part II

"Spotnailers increased our production 100%"

SOUTHWESTERN GLASS AND MILLWORK CO.
EL PASO, TEXAS

"We operate a plant in El Paso employing 39 men. We manufacture windows, doors, millwork, cabinets, map frames and other wood specialty products.

"2 Spotpinners and 5 Spotnailers used by our original crew of 39 men during the past year increased production 100%!

"We had no major work stoppages because of machine failure which is why we switched to your product. The V-nose Spotnailer is especially helpful on our cabinet line. Your divergent-chisel staples drive through hardest woods and hold tight in soft woods.

"Your local man's service has been excellent."

Robert J. Schuer
Mill Superintendent

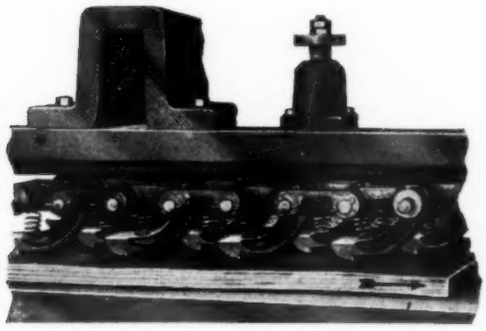
Learn how Spotnailers can increase your production and profits. One of our 100 representatives will demonstrate our "cost-savers" in your plant.

WRITE FOR SPOTNAILS CATALOG

SPOTNAILS, INC.

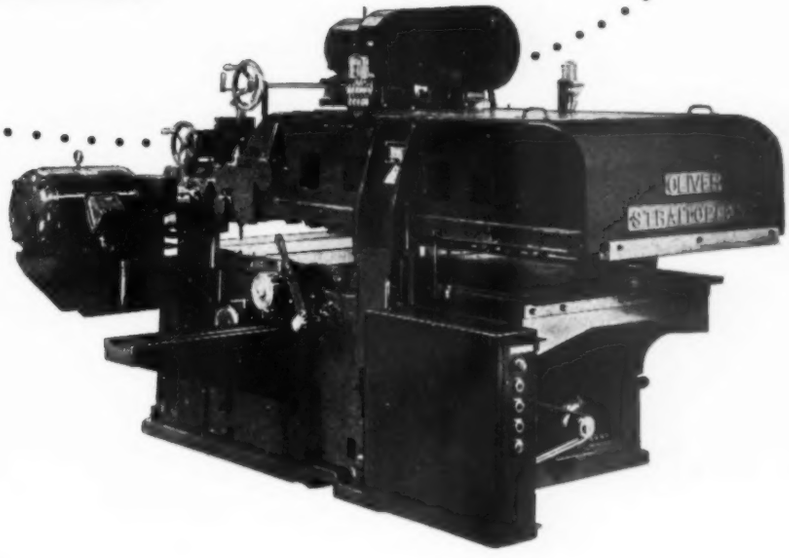
1527 LYONS STREET, EVANSTON 1, ILLINOIS

Finger-Tip Touch!



ELIMINATES SPLITTING

SAVES LUMBER



"OLIVER"
STRAITOPLANE

planes both sides of warped stock smooth and parallel — at the same time!

Before Straitoplaning

After Straitoplaning

In one pass the "Oliver" Straitoplane takes raw stock out-of-wind and planes both sides smooth and parallel — it does the work of a facing planer and a single surfacer. It planes out as much as ¼ inch on each side at speeds up to 90 feet a minute. The bottom side is face jointed, and the top side planed smooth to the desired thickness.

The Straitoplane will plane warped or straight stock simultaneously on both sides up to 36 inches wide, and from ½ to 6 inches thick. It planes both sides of pieces as short as 12 inches when fed continuously, as short as 16 inches when fed singly.

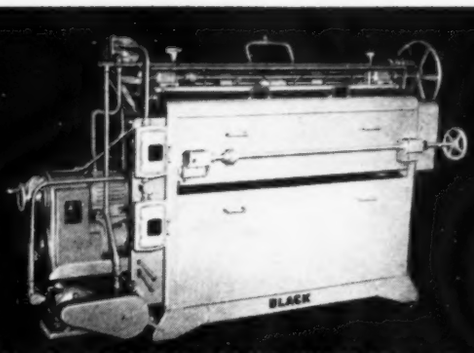
Write today for complete information.

"OLIVER" — *famous for Precision Machinery*

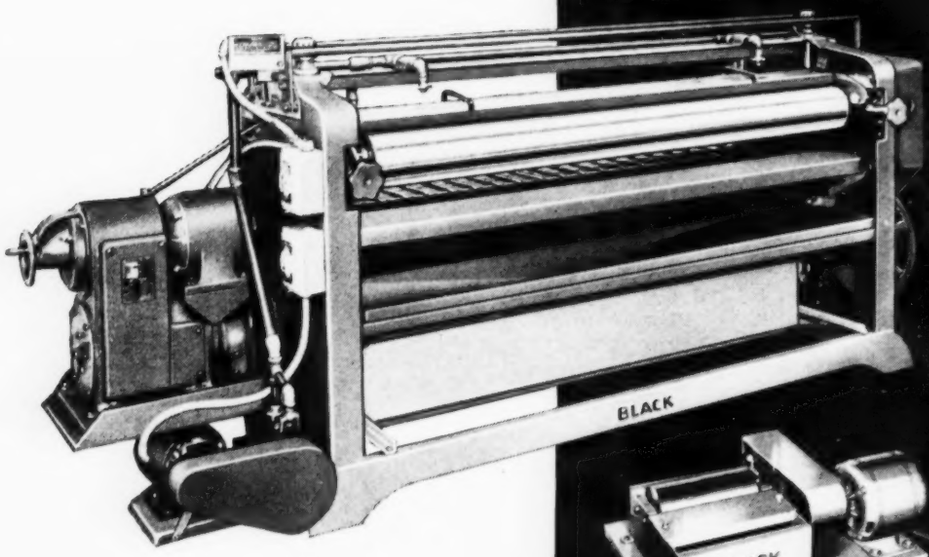
OLIVER MACHINERY COMPANY
GRAND RAPIDS 2, MICHIGAN

BLACK BROTHERS GLUE SPREADERS

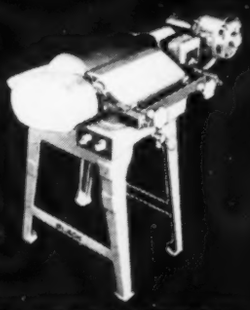
Complete Range of Sizes and Types for Fast, Economical, Accurate Gluing



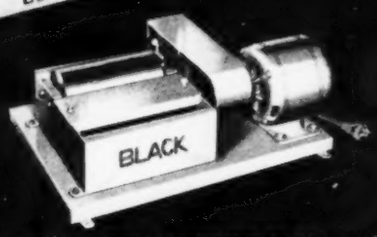
No. 22-D HOODED GLUE SPREADER—The modified 22-D glue spreader is arranged to successfully apply contact cements and adhesives containing volatile solvents. 8" through 122" capacities in 6" increments. *Bulletin 11-A, Part 5.*



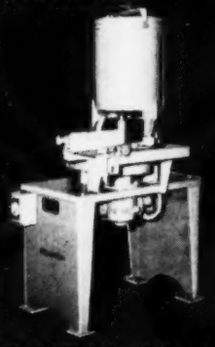
No. 22-D GLUE SPREADER — For resins, caseins, polyvinyls, protein and similar adhesives; 39 sizes in four models; 8" through 122" capacities in 6" increments. Proven the finest spreader available for the purpose. *Bulletin 11-A, Part 4.*



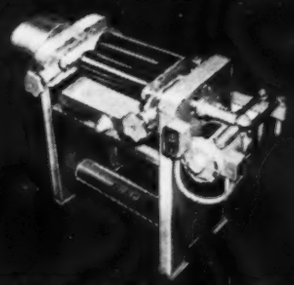
No. 567 GLUE SPREADER—Floor type, power-driven, hand feed roll glue spreader for edge gluing and similar operations. 12", 18" and 24" roll widths with 8½" diam. rolls. *Bulletin 11-A, Part 2.*



No. 2-8" BENCH-TYPE GLUE SPREADER—For light edge gluing and similar operations. Roll is 4" diam. x 8" long. *Bulletin 11-A, Part 1.*



VERTICAL GLUE SPREADER—Especially designed to speed edge-gluing; eliminates need to turn stock 90 deg. after it comes out of sizing machine. Glues stock up to 4" thick.



"BOBTAIL" 22-D GLUE SPREADER—For efficient application of resin glues; equally adaptable for other cold glues. Ideal for edge gluing lumber stock or other applications which require bottom coating only. *Bulletin 11-A, Part 2.*

You'll never know how fast, accurate and clean a gluing operation can be 'til you put a Black Brothers glue spreader to work in your glue room. Black's complete line of economical high production glue spreaders contains models for practically every type of adhesive, stock and gluing operation: Single and double glue spreaders from 8" to 122" capacity – vertical, hopper-fed, conveyorized, etc. Models, from our bench-type spreaders for laboratory or light production work – to our No. 22-D Super Series for extremely heavy duty operations. Of course, every Black's spreader has the extra-value features which have made them the leading name in gluing equipment throughout the world. Get full details today by writing for product bulletins.

Complete line of gluing, clamping, laminating and roller coating equipment — Since 1882

THE BLACK BROTHERS CO., INC,
MENDOTA 6, ILLINOIS

DON'T BURN IT!

. . . Sell it!

Scrap from your plant is too valuable to burn. Flake it and sell it as top-quality Bison Board — or use it in your own products . . . we can show you how.

The Bison System offers you proven performance, semi-automatic operation, low production cost, and *the world's finest flakeboard*. An installation can be tailored to your needs, with quality and production guaranteed. It is the *only* system that can produce high-quality flakeboard with 3500 M.O.R. when using 75% shavings.

Bison Board affords superior machining and finishing qualities — its progressively graduated particle structure concentrates fines to exterior for greater strength of thin sections, as well as protection against "telegraphing through" face veneers.

Every Bison System installation is test-run and proved before shipment, eliminating costly mistakes and start-ups. We can supply flakeboard samples *made from your own raw materials,* run through a standard production plant in advance of order and without obligation. See us for details.

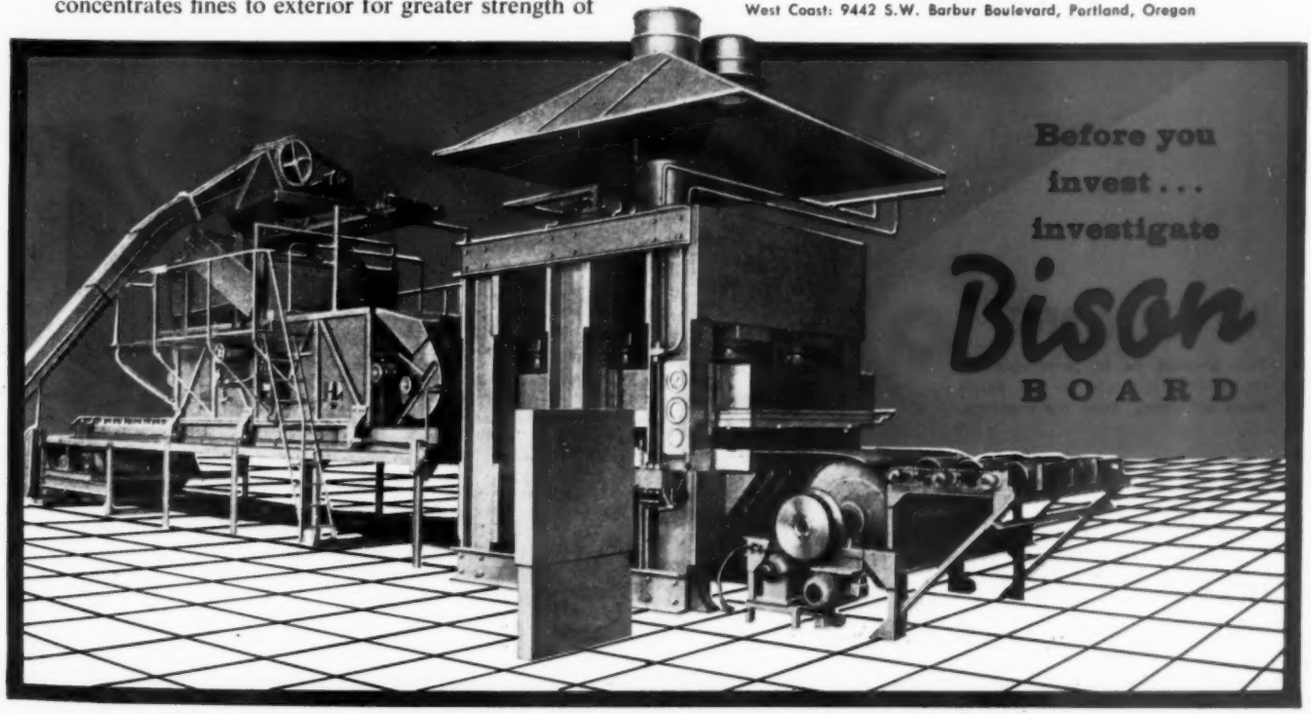
Sole American Distributor:

SODERHAMN MACHINE MANUFACTURING COMPANY

Soderhamn, Sweden, Since 1864

Talladega, Alabama

West Coast: 9442 S.W. Barbur Boulevard, Portland, Oregon



AMERICA'S FASTEST AND FINEST

IRREGULAR

SHAPE SANDER

THE NEW

PEARSON Model "A"

SAVES 1 OR 2 OPERATIONS!

Will not disfigure details! Many plants report this efficient sander saves 60% to 80% on sandcloth! Sands one or more stepdowns at the same time; sands inside radii of circles and very flat tapered moulding. With the Pearson Belt Attachment, shown below, this model can be converted to an all-purpose sander at small cost!

Standard equipment includes a one h.p. dustproof motor and 7 metal heads and 14 cushions made of finest grade rubber—

Length of cushions range from ¼" to 4"; outside diameters, 3¼" to 7".

TABLE BELT ATTACHMENT FOR PEARSON MODEL A SANDER

WE SELL DIRECT!

This enables us to personally instruct your operator to get maximum efficiency from the machine.

This table belt attachment enables you to do ANY sanding that can be done with a 1 h.p., 3 phase motor. Can be attached or detached in only 3 minutes! Our special hand slide babbitt form blocks can be used for straight mouldings. Model "A" Sander and attachment sold together or separately. Write for complete information.

PEARSON SANDING MACHINE COMPANY

HIGH POINT, NORTH CAROLINA

We also manufacture the well-known Pearson Block & Edge Sander

HITCHCOCK'S
wood working digest

Contents for August, 1960

16 Letters to the Editor
19 Quotes of the Month
20 Editor's Page
22 News Notes in Brief

28 Bassett Standardizes
36 Hines Makes Full-Sized Board
44 Double End Tenoner: Versatile Woodworker
60 NAFM Takes Second Look
77 Trouble-Shooting in Woodworking

65 Around the Shop
73 Right or Wrong
85 Machining Framed-up Assemblies
90 Available Literature
94 Industry Notes
100 Equipment and Supplies
118 Indexes on Insert

DARRELL WARD
Engineering Editor
BERT GOLDRATH
NELSON NASH
PAUL H. GRAHAM
Contributing Editors
R. MILLER
Editorial Assistant
VICTOR ERICKSON
Editorial Art Director

BUSINESS STAFF

ROBERT C. VAN KAMPEN
President
VINCENT C. HOGREN
Executive vice-president
WM. F. SCHLEICHER
Vice-president & Editorial Director
OLIVER S. PEPPER
Business Manager
JOHN S. TODD
Production Manager
D. L. CAMPBELL
Advertising Production Manager
ROBERT L. SPRECKELS
Circulation Manager
GENE WEST
Fulfillment Manager
RAYMOND J. SIETSEMA
Director of Research
BRUCE B. HOWAT
Director of Marketing
L. M. SCHROEDER
Advertising Art Director

Circulation: More than 16,000 copies every month.

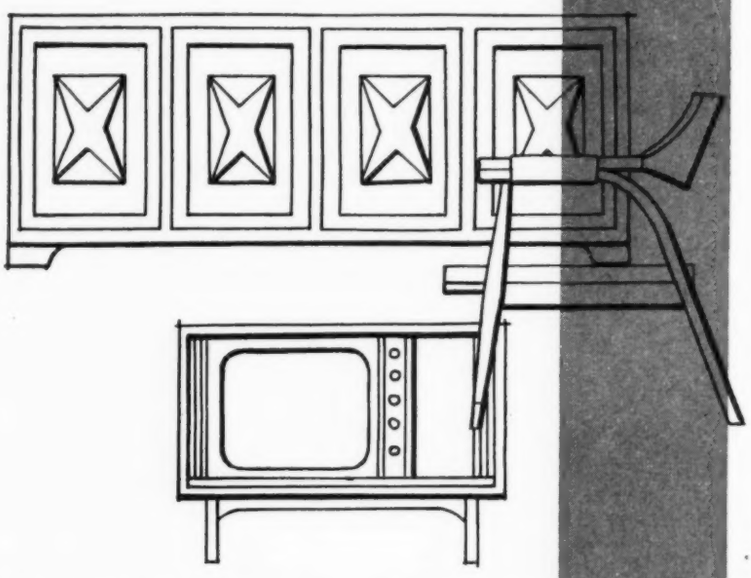
BPA

SUBSCRIPTION RATES: Domestic—1 year (12 issues) . . . $4.00 2 year (24 issues) . . . $7.00. Canadian and Foreign—1 year (12 issues) . . . $5.00; 2 years (24 issues) . . . $10.00. Copyright 1960, by Hitchcock Publishing Co., Wheaton, Ill. Phone, MOntrose 5-1000, Cable Address, HITCHPUB.

Traditional Woodworking Craftsmanship

Geared to modern production demands by

Bell WOODWORKING MACHINES



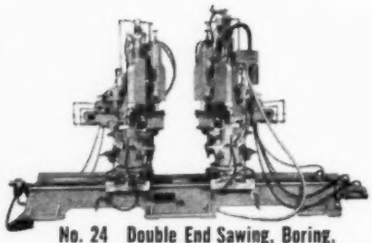
Now even "heirloom" quality can be produced in quantity! Prove it with Bell woodworking — wonderworking — machines. No job is too big . . . or too small . . . or too exacting for these high speed, high precision mechanized craftsmen. Saw, chuck, bore, dowel, glue, or handle special jobs with uncanny perfection and maximum economy. Ask Bell to investigate your special problem. You're bound to profit.

For Complete Information Write:

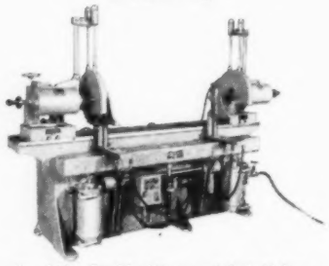
THE **Bell** MACHINE COMPANY

101 Jackson St., Oshkosh, Wis.

A J. M. NASH CO. SUBSIDIARY



No. 24 Double End Sawing, Boring, and Chucking



No. 112 Double Mitre and Cutoff Saw

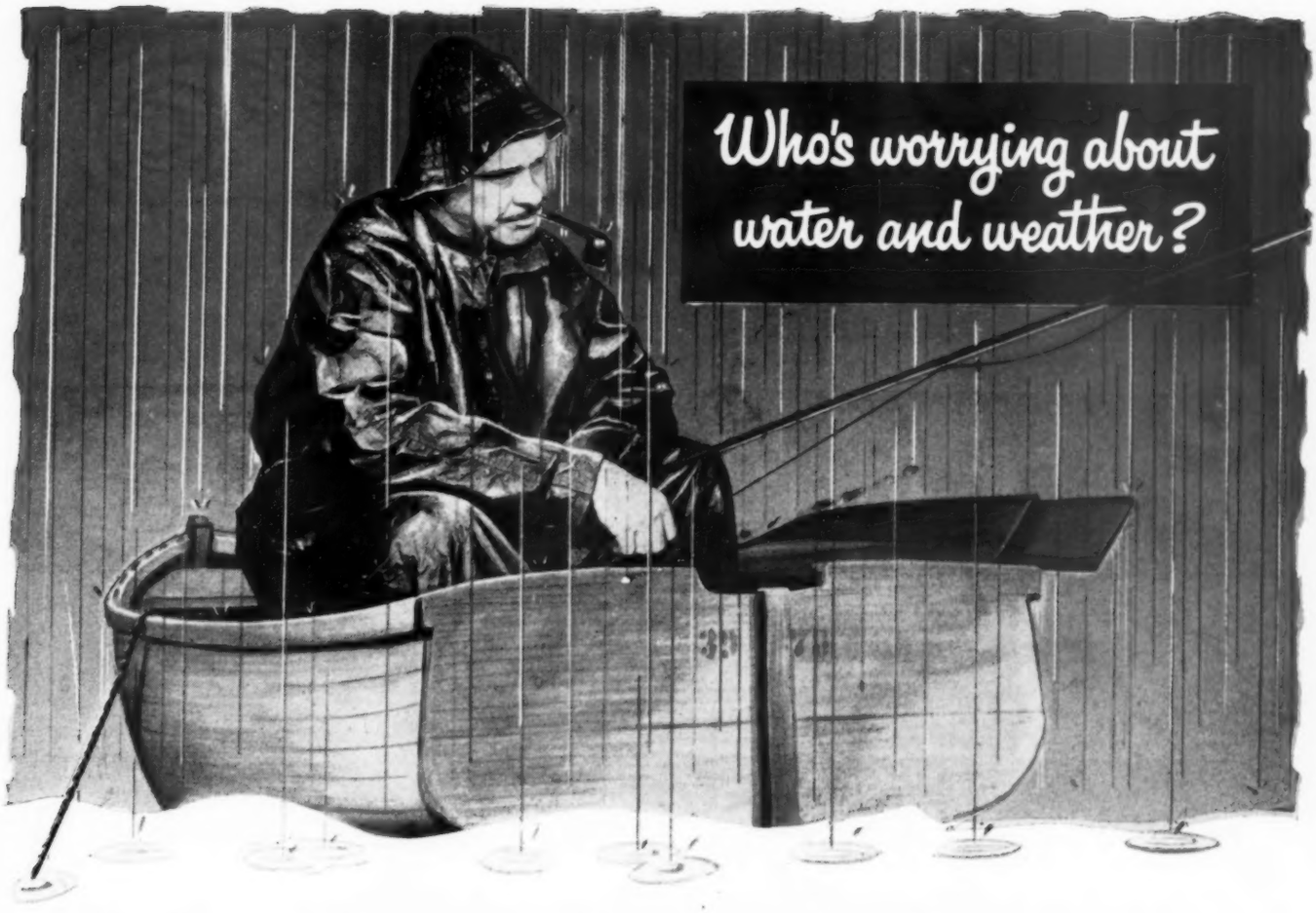
No. 100 Post Borer

No. 180 Multiple Head Mortiser

No. 108 Gluer and Dowel Driver

No. 70 Air Power Clamp

No. 300 Electronic Edge-Gluer



National Casein's R3 provides the most waterproof and weatherproof bond obtainable!

National Casein R3 is used also as a fortifier for Urea Resin glues where greater water and craze resistance is desirable. Having trouble meeting requirements of Spec. Mil-A-397B—ask the National Casein office nearest you for samples of "R3" and technical help in adapting it to your glue line. No obligation.

Waterproof . . . boil-proof . . . mold-proof—National Casein's R3 Resorcinol Resin Glue is recommended for any product made of wood that is destined for outdoor use under extraordinary conditions of water, weather and humidity.

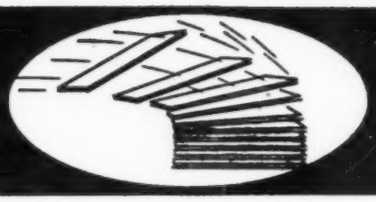
National Casein's R3 Resorcinol Resin Glue is used for cold press work at 75° F. It is used also for hot press work and high frequency gluing, because it is thermo setting.

For aircraft and marine grade plywood . . . laminated timber construction . . . paneling and structural units for prefabricated housing, and for bag moulding construction you will find National Casein's "R3" positive assurance of your product's performance.

National Casein

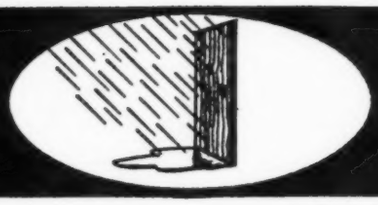
National Casein Company, 601 W. 80th Street, Chicago 20, Illinois
National Casein of New Jersey, Broad & Fulton Streets, Riverton, New Jersey

SPEED PRODUCTION



LOWER GLUE COSTS

Increase Water Resistance



. . . . with PERKINS 8523 CASEIN GLUE

Perkins 8523 Casein Glue, a blend of several adhesive materials, offers manufacturers of flush doors an opportunity to speed up production and increase water resistance at a lower glue line cost!

The formulation also offers advantages in other panel-to-frame gluing operations as well as in veneering and in laminating.

With Perkins 8523, pressure periods of up to one hour are sufficient. Overnight stacking is recommended for best results but less time is possible where necessary.

The glue line complies with the two cycle soak test called for by Commercial Standard CS 171-58 as well as the Type II and Type III requirements of CS 35-56. Actually, the bonds obtained with the Perkins 8523 formulation have given far better results than the Commercial Standards require.

The mixed glue cost of the formulation is much lower than that of other glues with fast set and high water resistance, representing a considerable saving to most glue users. It has a pot life of 6 to 8 hours, depending upon room temperature. Storage life of the unmixed Perkins 8523 is from three to five months.

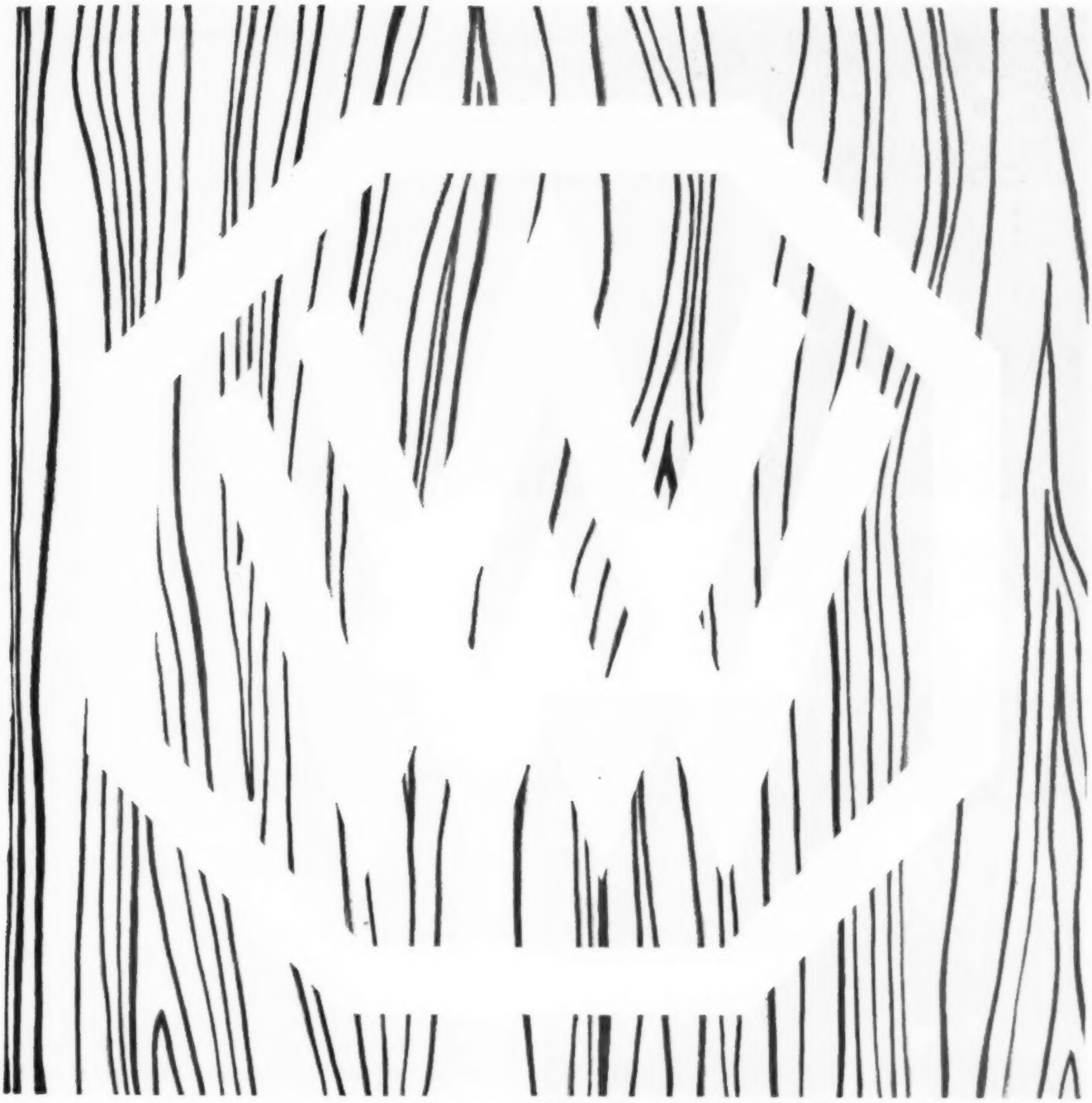
It should be emphasized that Perkins 8523 is not an ordinary casein glue. It is a carefully prepared blend of casein with other materials having desirable adhesive properties.

Samples of the formulation are available for your tests or the Perkins service representative in your area will be glad to conduct a demonstration in your plant to prove the advantages you can obtain with Perkins 8523.

PLANTS IN LANSDALE, PA.; SHAWANO, WISCONSIN; HIGH POINT, N. C.; WEST MEMPHIS, ARK.; KITCHENER, ONTARIO and LA CHUTE, QUEBEC

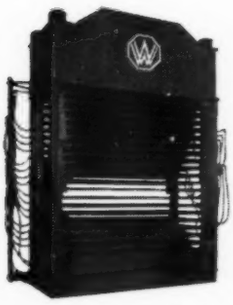
PERKINS GLUE COMPANY

Lansdale, Pennsylvania



the measure of Performance Reliability for more than a century

More DOUGLAS FIR PLYWOOD is produced on WILLIAMS-WHITE presses



Actual machine inventories prove that more plywood plants own more Williams-White hot plate presses than any other make. And actual performance records show that Williams-White custom engineering pays big dividends in increased production, longer press life, less down-time and reduced maintenance costs.

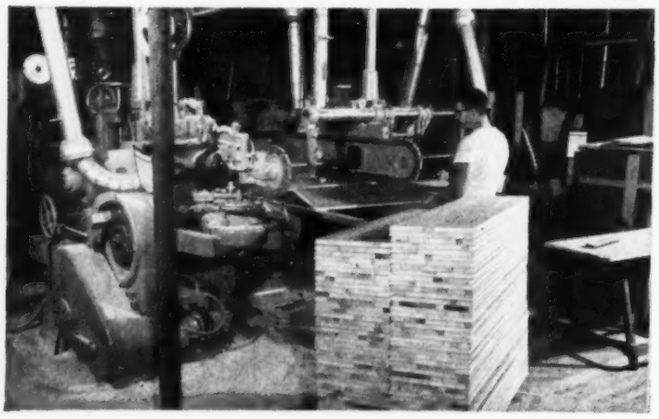
Backed by 106 years of engineering success, your Williams-White press is keyed exactly to your particular production requirements and is built to withstand the heaviest, steadiest schedules.

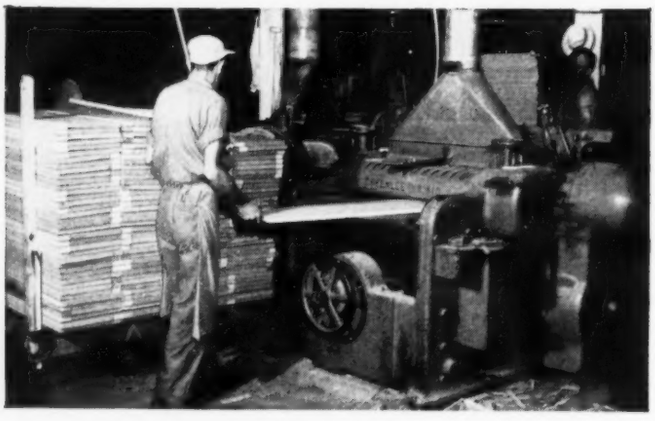
For more details on Williams-White custom-designed multiple opening hot plate presses, write today for free Bulletin Number 200-A.

WILLIAMS-WHITE & CO 600 Third Avenue, Moline, Ill., U. S. A.

SALES AGENTS: Portland, Oregon: Allied Northwest Machine Tool Corp.; **Seattle:** Perine Machinery & Supply Co., Inc.

by Drexel





. . . carefully crafted with Greenlee Specialized Woodworking Machines

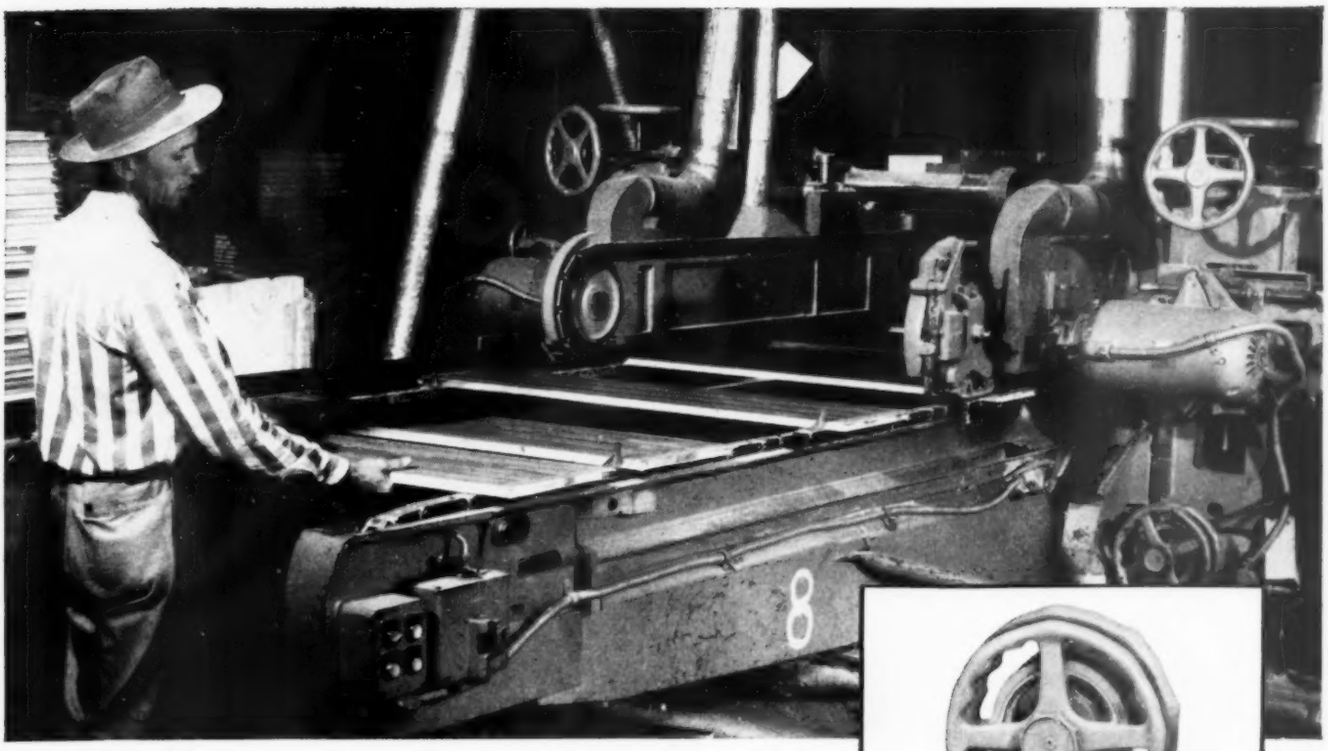
Drexel Furniture is extremely well designed and beautifully crafted. The bedroom suite above is found in the Drexel Touraine® Collection. Formal and feminine . . . it brings Louis XIV elegance to the home of today.

The Double-End Tenoner (upper left) performing jump dadoing on end panels is also equipped with cam-operated shaping attachments for irregular edge work. In addition, Drexel uses many other Greenlee Woodworking Machines in its three plants. For example, the Greenlee No. 110 Six-Roll Planer (lower left) is used for both first and finishing cuts on particle board and solid stock. Write for complete information on the Greenlee No. 545 Double-End Tenoner and the No. 110 Planer.

GREENLEE MAKES MACHINES FOR PLANING, SHAPING, TENONING MORTISING, BORING AND SAWING

PRODUCTION MACHINERY

GREENLEE ***Specialized Machines Produce Greater Profits***

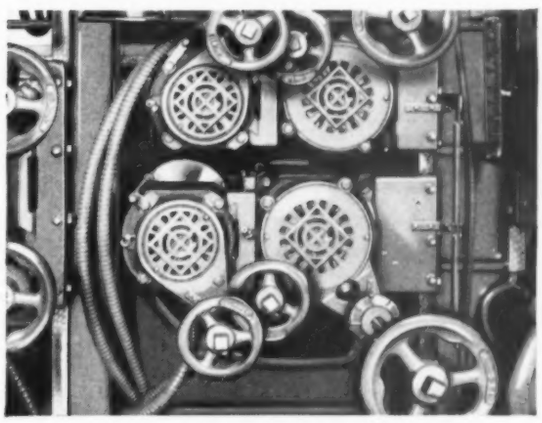


Upper and lower tenoning units can be locked in their relative positions and moved simultaneously by rotating the double hand-wheel. This permits tenon thickness to be maintained. The tenoning units can also be set independently . . . adjustment dials are calibrated in thousandths.

FURNITURE by Drexel® IS PROFITABLY PRODUCED ON GREENLEE DOUBLE-END TENONERS

Drexel Furniture Company of Drexel, North Carolina acquired their first Greenlee No. 545 Double-End Tenoner more than 20 years ago. Results were so satisfying that five Greenlees are now in operation at the Drexel plants. (Incidentally, the first machine is still producing accurate, high quality work). Drexel is one of the best-known manufacturers of quality furniture in America. They offer more pieces, in more styles, in more periods than most furniture manufacturers. This calls for extreme flexibility in production. Greenlee machines provide this flexibility . . . help minimize production costs. Find out how your plant can use Greenlee machines to improve profits.
Write for complete information.

PRODUCTION MACHINERY
GREENLEE



Scoring saw units are mounted on the tenoning motor housings and adjust with them, maintaining accurate alignment without additional adjustment. Independent adjustments of the scoring saw units are provided.

WOODWORKING MACHINERY MANUFACTURERS ASSOCIATION WMMA

GREENLEE® BROS. & CO.

**1924 TWENTY-FIRST AVE.
ROCKFORD, ILLINOIS**

Now the FIRST American utilization of the famous Bison system . . .

Duraflake brings to the industrial and building fields a new board much superior to boards presently available. The unique Bison system ingeniously forms the boards with the larger wood flakes in the middle and progressively graduates the flakes so that the "fines" automatically form the top and bottom surfaces. Proved by test against telegraphing in use. The resins are applied to the wood particles in such a way as to insure uniform coverage of the largest as well as the smallest particles. This achieves the highest possible internal bond. Duraflake is superior in smoothness, strength characteristics, drilling and cutting and construction qualities. You will find Duraflake the practical, economical, superior wood formed board with a thousand uses. For information of specific applications mail coupon today.

Duraflake

A NEW WOOD FORMED BOARD providing more internal strength and a smoother, harder surface.

a better board because . . .

- Fine surface prevents telegraphing.
- Excellent screw holding properties.
- Strong internal bond.
- Maximum dimensional stability.
- Tight core for outstanding edge and face cutting.
- Machinability.
- Superior modulus of rupture.
- Uniform density.
- 5′ x 16′ press for great latitude of sizes.
- Teco quality control.

Mail coupon today for Duraflake brochure or information on specific application:

Wood Fibreboard Co.
P. O. Box 245
Albany, Oregon

Name_____

Street_____

City_____ Zone____ State_____

Duraflake is ideal core material for fine furniture. No telegraphing through finish veneer. Cross banding not necessary. The same fine results are achieved in industrial and building uses.

Wood Fibreboard Company

P. O. Box 245 • Albany, Oregon
Telephone WAbash 8-3341 • TWX Alby 696

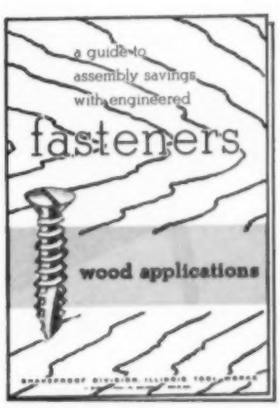
HOW TO SELECT COST-SAVING

fasteners for wood

A TYPICAL EXAMPLE:
How to Fasten Hinges –

Drill and fasten in one operation with Type 17 Self-Drilling Screws. No costly hand drilling of pilot holes, no hole-locating. Type 17 Screws are stronger because they're heat treated, drive easier than regular wood screws.

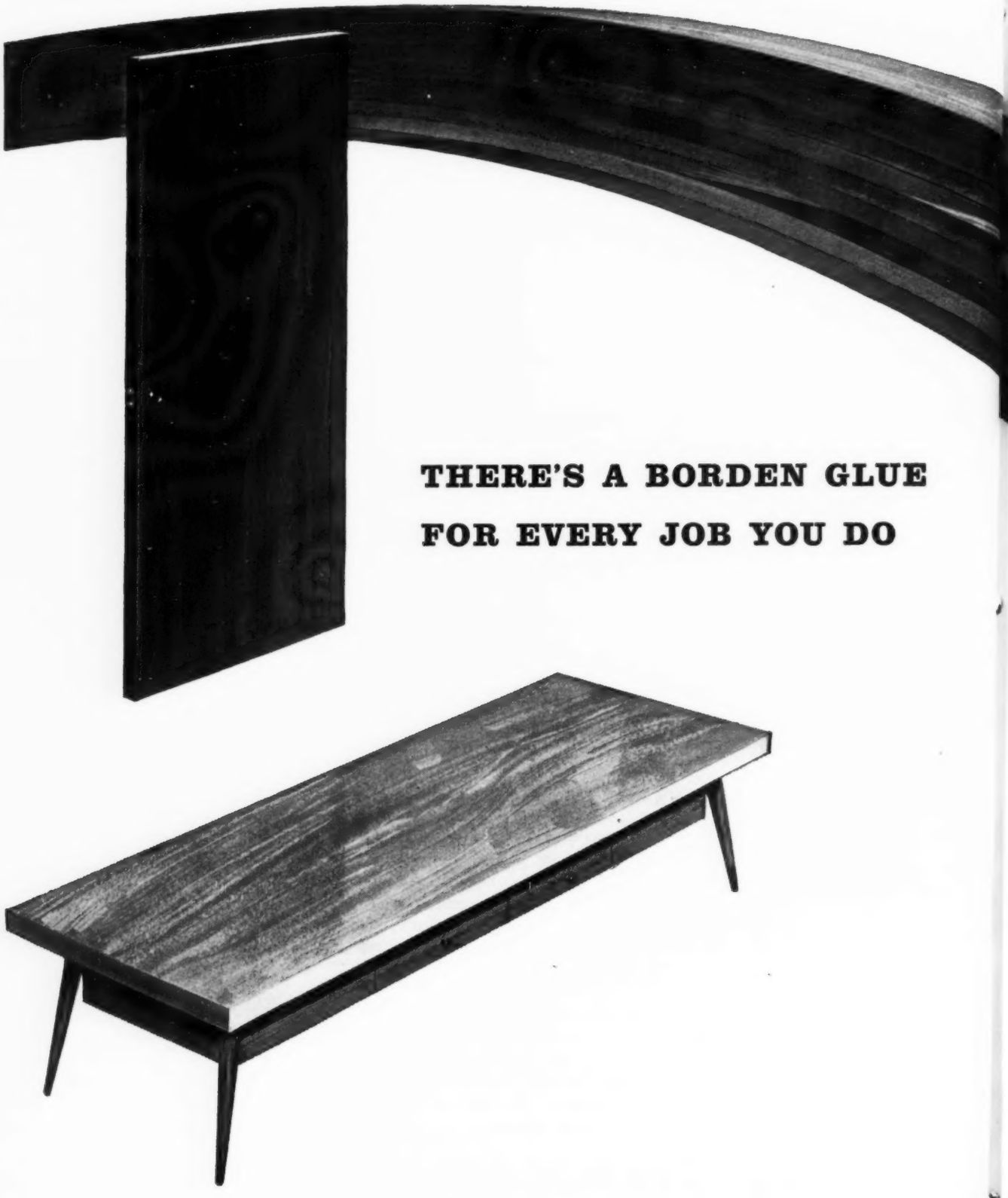
Remarkable new efficiency and cost-savings can now be achieved in metal-to-wood and wood-to-wood assembly! Ordinary wood screws are being replaced by screws that drill their own holes. Washers can be ordered pre-assembled to nuts or screws. A double-purpose lock washer that replaces two separate parts, a fastener that won't strip . . . these and many other Shakeproof-engineered fasteners offer substantial savings to plants using them in production quantities.



SEND FOR NEW SHAKEPROOF BULLETIN NO. 5001

Specific recommendations for fastening into wood are illustrated, along with helpful, time-saving assembly suggestions. With today's high costs, you can't afford to overlook the fastener savings described in this bulletin. Write for your copy today.

SHAKEPROOF
"FASTENING HEADQUARTERS"®
DIVISION OF ILLINOIS TOOL WORKS
St. Charles Road, Elgin, Illinois
In Canada: SHAKEPROOF/FASTEX
Division of Canada Illinois Tools Limited, 67 Scarsdale Road, Don Mills, Ontario



THERE'S A BORDEN GLUE

FOR EVERY JOB YOU DO

© The Borden Company

Plywood, glulams, flush doors, edge-gluing, furniture, whatever your adhesive problem—Borden's job-balanced adhesives keep your gluing department moving smoothly and profitably. Borden's adhesives are tailored by our laboratories to meet your specific job needs.

There's a Borden adhesive to do every job—hot press, cold press, RF gluing, plastic surfacing, assembly gluing, and metal to wood gluing. Plants in Bainbridge, N.Y., Demopolis, Ala., Fayetteville, N.C., and Browntown, Wis., are ready to supply you . . . *fast.* Don't just buy adhesives—buy Borden's! And Borden specialists can help you set up an adhesives program based on your specific needs. Write The Borden Chemical Company, Resins and Chemicals Dept. HW-80, 350 Madison Avenue, New York 17, N.Y.

THE BORDEN CHEMICAL COMPANY ©TBC

For information about any advertised product, see the Advertisers Index and Action Card inside back cover

INTRODUCING!

a newcomer in the DUO-FAST line of air-operated stapling machines...

The DUO-FAST S-6432

Drives narrow crown staples 5/8" to 1" long.

Here it is! The new DUO-FAST Staple Tacker that drives those long, narrow crown staples the way you want them driven... easily, securely, and at low air pressure. A DUO-FAST valving design provides the power-plus.

You can operate the S-6432 to suit yourself... by trigger or by touch-trip control. And you drive those staples as fast as you can operate the tool.

This rugged, new air tacker weighs only 3 lbs.... has an air return piston... permits close-to-edge tacking... and holds 168 staples loaded via a staple chute.

You'll want to consider the DUO-FAST S-6432 Staple Tacker on those jobs requiring the narrow crown staple in 5/8", 3/4" and 1" lengths.

Write today for an in-your-plant demonstration and a copy of the FT-29 bulletin on this tool.

Over 50 DUO-FAST Sales & Service Offices in principal cities ready to serve you.

FASTENER CORPORATION 3706-08 River Road, Franklin Park, Illinois 0438

DUO-FAST Staplers Tackers Staples

Everything you need for tacking, stapling and nailing.

Letters To The Editor

Bone-White Finish

"Please request some of your readers to advise the best way to make bone-white finishes on pieces of occasional furniture."

—P. D., GEORGIA

Is It Practical?

"I am trying to determine the possibilities and potential for a small woodworking shop on a commercial basis. Your magazine has been recommended to me. May I have advice and suggestions. Perhaps you can suggest a source of information helpful to me."

—J. W., TEXAS

They Like Magazine

"The two articles in Hitchcock's WOOD WORKING Digest March issue, are terrific! Keep up the good work. We need more articles of this nature proving that wood is best!"

—J. A., MICHIGAN

"We would very much appreciate receiving a reprint of the article on the New York Golden Jubilee Boat Show."

—D. L., NEW JERSEY

"If possible, would you please send six copies of the article entitled, 'Are You Using Circular Saw Blades to the Best Possible Advantage?' This was in your May issue."

—L. N., OREGON

"May we please have tearsheets of the article 'Panels From Pines'? We'd like to keep our own copy intact."

—H. K., NEW YORK

Help, Please

"Will you please send me the names of several companies which could furnish parts for windows and for window frame units?"

L. B., MAINE

"In your April issue we saw a write-up of a machine that can be used to sand the bull-noses of lipped cupboard doors. We lost the article but are very much interested in the machine."

—H. G., NEW JERSEY

"We would appreciate your telling us where we can buy parts for the No. 92 Berlin planer and No. 92 molder. These were made some 40 years ago in the U.S."

—L. K., ONTARIO

❶ SAVE ON SAW SHARPENING COSTS

❷ INCREASE SAWING PRODUCTION

❸ IMPROVE WORK QUALITY

❹ PROLONG LIFE OF YOUR SAWS

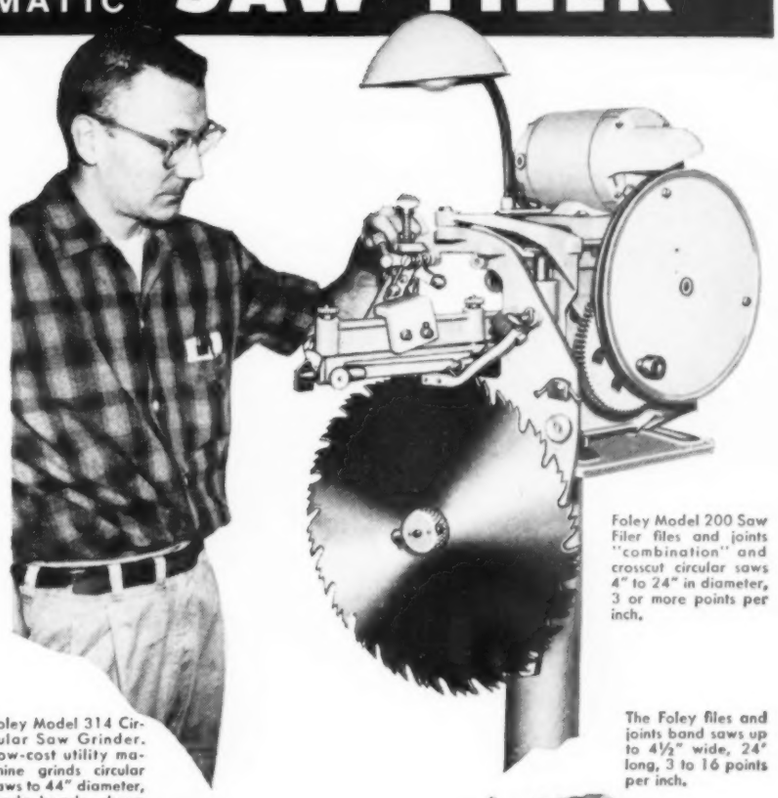
FOLEY MODEL 200 AUTOMATIC SAW FILER

❶ Save on Saw Sharpening Costs— If you are having saws sharpened by any other method than the precision machine accuracy of the Model 200 Foley Automatic Saw Filer—perhaps only our 30-Day Trial Offer in your plant will convince you of the savings possible. The Foley sharpens both "combination" and crosscut circular saws, band saws, hand saws. If you pay $25.00 or more a month for sharpening—the Foley will soon pay for itself in your plant. Find out—try it for 30 days.

❷ Increase Sawing Production— With your saws always sharp—no dull saws used while waiting for sharp ones—your sawing production or output rises amazingly and without effort or crowding. Many plants have experienced 25% to 40% increases with Foley-filed saws.

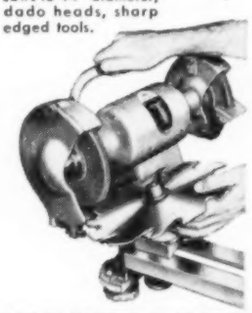
❸ Improve Work Quality—With the exclusive Foley principle of automatically jointing the saw as it is filed—all teeth are kept uniform in size, shape, spacing. *Every* tooth cuts! Result—smooth, true cuts that save time, improve accuracy and work quality. A better product at lower cost.

❹ Prolong Life of Your Saws— Because the Foley jointing principle keeps circular saws perfectly round as well as all teeth uniform, your troubles with cracked saws or broken teeth just disappear. Foley-filed saws frequently last up to twice as long. Adding this saving to the others above—can you afford *not* to try a Foley? Send coupon today for details of 30-Day Trial Offer.



Foley Model 200 Saw Filer files and joints "combination" and crosscut circular saws 4" to 24" in diameter, 3 or more points per inch.

The Foley files and joints band saws up to 4½" wide, 24" long, 3 to 16 points per inch.



Foley Model 314 Circular Saw Grinder. Low-cost utility machine grinds circular saws to 44" diameter, dado heads, sharp edged tools.

30-DAY TRIAL OFFER

You may try the new Model 200 Foley Saw Filer in your own shop for 30 days. See for yourself its precision work, advanced design and quality construction—time-proved through more than 50 years. Write or send coupon for literature and details of 30-day trial offer.

FOLEY MANUFACTURING CO.
3351 N. E. 5th St., Minneapolis 18, Minn.

Please send literature on Model 200 Foley Saw Filer and details of 30-Day Trial Offer.

NAME _____ TITLE _____

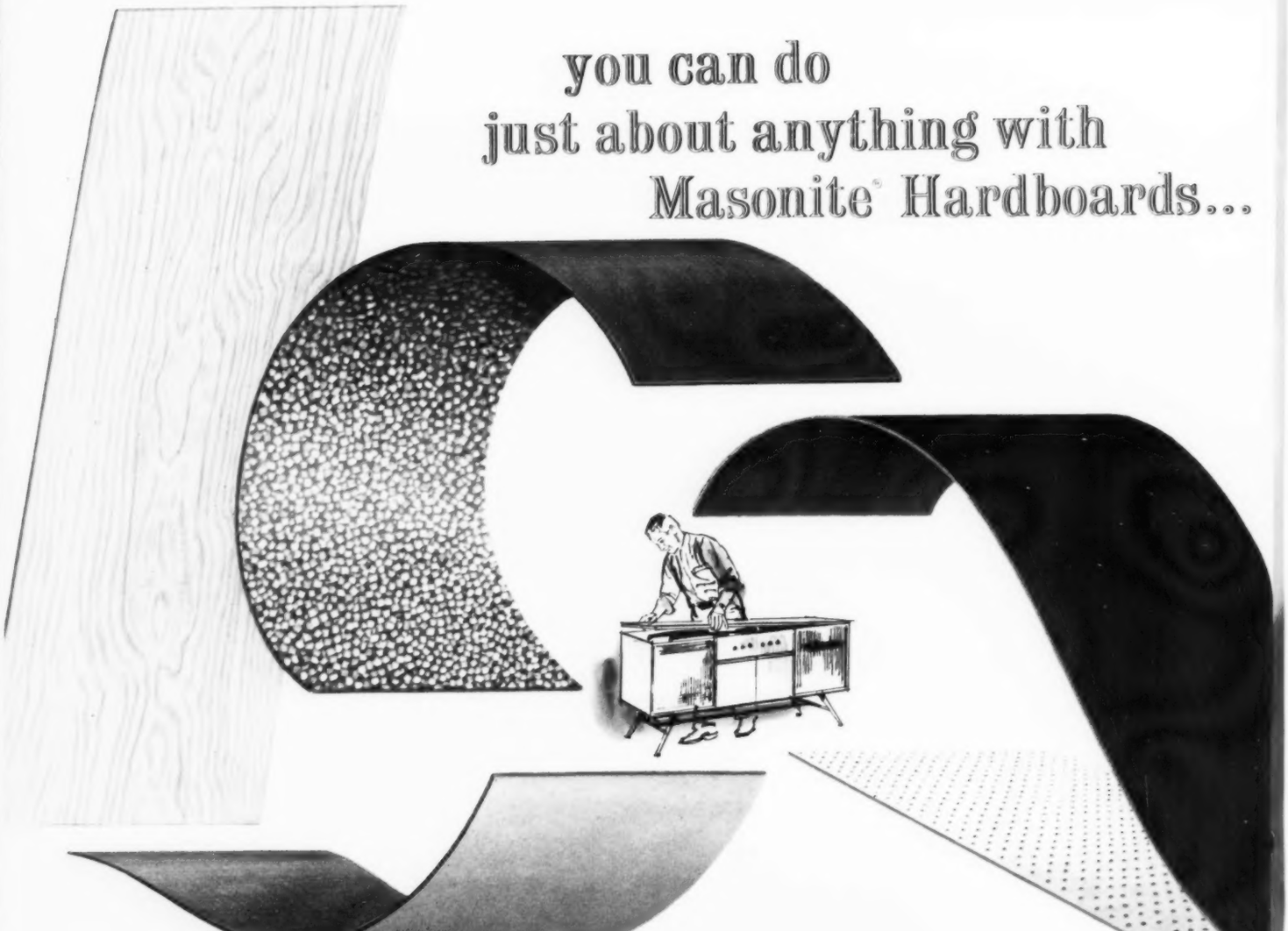
COMPANY _____

STREET ADDRESS _____

CITY _____ STATE _____

For information about any advertised product, see the Advertisers Index and Action Card inside back cover

you can do just about anything with Masonite® Hardboards...



for example Masonite offers you a complete choice of thicknesses, densities, textures and patterns; wonderful workability; a smooth surface that takes and holds any kind of applied finish, from chalkboard to silk screen. And Masonite makes available to you walnut and cherry wood-grained panels in a wide variety of sizes.

in fact Masonite provides three popular finishes: save-a-step Primecote, rich wood grains, and fabricator finishing...plus two exclusive new features for do-it-yourself customers: (1) the Nu-Seal process—a clear, nonglossy finish that makes for smooth, even, permanent finishing in your own plant; (2) drum sanding—exact calibration that means the precise board thickness you want. Edge-to-edge and top-to-bottom uniformity means quick receptiveness to your finishing operations.

MASONITE® CORPORATION

®Masonite Corporation—manufacturer of quality panel products for building and industry

Primecote is a registered trade-mark of Masonite Corporation.

Masonite Corporation
Dept. 2-3, Box 777, Chicago 90, Illinois

☐ Please send latest design and production information on Masonite panel products.

☐ Please have your sales engineer call.

Name.....

Address.....

City.....*State*.....

Zone.....*County*.....

WORDS AT WORK . . . Selected Quotations

Don't Imitate Hardwoods

"Designers are now applying an almost lapidary technique in cutting and manipulating fine wood to exploit its maximum beauty. We are beginning to set it with jewel-like emphasis against the colder and more predictable but altogether efficient materials wrought by man. They work together, but the many materials that have been forced to imitate the characteristics of hardwood will find an even more legitimate place in our visual world when they are allowed to revert to their own personalities."—*Designer John Van Koert before the 10th anniversary banquet of the Hardwoods Exhibit, Chicago Museum of Science and Industry.*

Double Forest Products Research

"Last year, 10 billion dollars was spent for research of one kind or another. I think it's important that our lumber industry spend more on 'Forest Product Research'. There are three main objectives of research: improve quality of the product, reduce its cost of manufacture, and develop new products. . . . One problem is that research, as such, is not fully understood by people. People take research results for granted—they think this progress just happens. . . . Research is hopelessly helpless without marketing and merchandising to sell the product. But by the same token, marketing and merchandising rely on research."—*Dr. Frank Kaufert, University of Minnesota School of Forestry before a regional Hoo-Hoo meeting.*

Let's Drop Three Words

"There are three words which I would like to have deleted from the English language: one is functional, another streamlined, and a third decoration. Functionalism has lost its luster, and it is an injustice to call people decorators who sincerely plan interiors that are useful, workable and beautiful within a budget. . . . Streamlining is the sinful province of the industrial designer. We have been cursed with this obsession that everything is going somewhere in a hurry, whether it be a pencil sharpener, a fountain pen, a house frau's kitchen or a New York taxicab!"—*Edward D. Stone, architect, before the National Society of Interior Designers.*

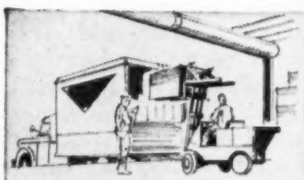
Where To Cut Costs

"Manufacturers of wood products must begin a new approach to product design if current yearly increases in productivity are to be maintained or improved. Machining processes are nearly at the automation apex, but major improvements are possible and can come from faster and lower cost assembly methods. Unfortunately, the last thing that design engineers seem to consider is how to put the product together. Yet manufacturers could expect a substantial decrease in assembly costs if this attitude were changed. . . . The problem is not with equipment, fasteners and assembly methods. It's simply a matter of making designers aware of the importance of assemby and of designing the product for building-block automated production."—*C. E. Heilig, Jr., of United Shoe Machinery Corporation, in a speech given during the Design Engineering Show.*

...and your fabricator will help you in all these ways:

ENGINEERING
Your Masonite fabricator helps fit the product to your picture. Wherever you now use wood or metal, he'll point the way to savings on material and tooling.

FABRICATING
Your Masonite fabricator has complete facilities for die-cutting, punching, cutting, routing, forming. He provides any number of finishes (including wood-graining) and laminates—even partial assembly!



WAREHOUSING
No inventory problems. Your Masonite fabricator will deliver ready-for-use parts in any number your job requires—once a week, once a month, you name it. To save production space, as well as manufacturing and assembling time, contact the nearest address below.

2352 Glendale—Milford Rd., Cincinnati, Ohio
600 Progress St., Elizabeth, N. J.
1577 Rio Vista Ave., Los Angeles, Calif.
500 Carolina Ave., Thomasville, N. C.

MASONITE FABRICATORS

®Masonite Corporation—manufacturer of quality panel products for building and industry

The Editor's Page

DECADE OF COMPETITION OR NEW ADVENTURE?

This is going to be a decade of competition. The NAFM show this month is emphasizing a "second look" theme, the decade of competition instead of the previously anticipated "fabulous sixties."

But, hasn't furniture and all woodworking for that matter always been highly competitive? We are just as competitive as appliances, automobiles, electronics and others. Yet, we sometimes fail to meet competition in the same aggressive way. Why?

Autos report the best year since 1955, largely because of the switch to the "fun and economy" compacts demanded by the market. This was not easy. It required imagination, a realistic view of the facts, and a complete renovation of facilities to produce something so different.

Radios and phonographs, on the way out a few years ago, are now at the top of the growth list of appliances. AM sets added Hi-Fi record players and FM tuners. Shellac records were replaced by vinyl. The old 78's slowed to 33-1/3 and 45 rpm to give more music for the money—and with much better quality. Hi-Fi soon became embellished with stereo. Not only were the basic appliances radically changed, but the entire industry approach to canned music made a great cultural contribution to our way of life.

Dishwashers have boomed, They're expensive, but they offer the housewife one of the most wanted devices since homemade soap disappeared.

Medium-priced contractor-built housing is flat on its face. But, manufactured homes and mobile homes are booming because they offer the consumer a big package of reasonably good quality at an unusually good price.

How do these compare with some of our own industry? Take a look at a couple of leaders and let's see.

Curtiss plunged into a widespread reorganization of facilities, manufacturing techniques and distribution—all to hit directly at what the customer demands at the grass roots level.

Bassett, whose finishing story appears in this issue, has become the world's largest furniture maker by bracketing the market from one end to the other with infinite variety and price ranges. This was made practical by a standardized approach which allowed plenty of room for imagination with a minimum of materials and facilities.

Lane, who believes his best contribution to the community is to look after his business and his employees, has been extraordinarily progressive in the imaginative development of new equipment, new lines of merchandise, and radically new styling to meet changing popular tastes.

Competitive decade, we say! Could it be more competitive than the woodworking field already is? If not, why haven't we been able to make the show that some of the other industries have in a much shorter life span?

Let's lift a few pages from the books of leaders in our own industry as well as those of the other industries and formulate a real plan of action instead of coining phrases:

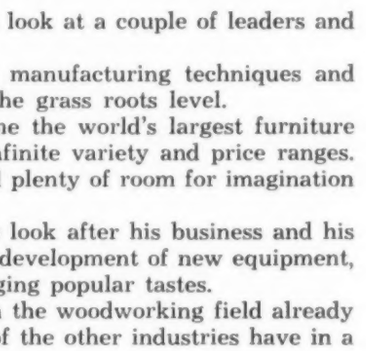
1—We must know at the grass roots level what the market demands and needs. We can promote our own basic philosophy only in terms of what is realistic to the customer we approach.

2—We must adapt ourselves to continuous change, looking at business with a spirit of adventure and ready imagination—not as a competitive headache. When constructive imagination is applied with a lust for adventure, we lift ourselves above the level of open field competition because the attitude alone makes one different from the common herd.

3—We must explore new ways of thinking, new techniques for bringing our thoughts into concrete form, and new equipment necessary to produce the parts for that form.

You won't last through the 1960's if you focus only on "the decade of competition" without seeing further into what it can mean. Use more imagination. Eliminate obsolescence. Dissolve crystallized thinking. Learn to look on business as a great adventure.

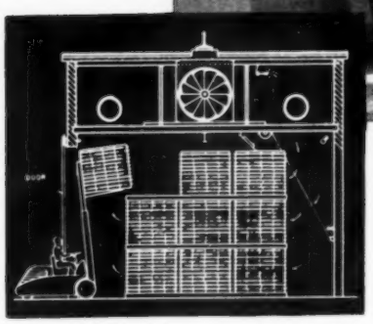
In addition to taking a "second look" into the decade of competition, let's take a third look and say, "This is the Decade of Imagination and Adventure."



Darrell Ward

Engineering Editor

MOORE MODERN METHODS



THE MOORE DIRECT HEAT KILN

Solves "No Steam" Problem– Burns Gas or Oil

Moore Modern Methods have solved the "no steam" problem with the Moore Direct Heat Cross Circulation Kiln. By burning gas or oil, the Moore Kiln eliminates the need for boiler systems and round-the-clock firemen — gives greater convenience in drying and close control over seasoning.

One report from a Direct Heat Kiln user indicates a saving between $6,000 and $7,000 per year with their Moore unit package oil fired Kiln. The saving resulted from decreased labor costs, reduction of handling costs and lower fuel costs.

The Moore Gas or Oil Fired Kiln is available either for loads on rails or unit packages. If you have a drying problem, let Moore solve it through modern methods and drying equipment. Write today for information on Moore products for better drying.

- Dry Kilns (Track and Unit Package)
- Direct Heat Kilns
- Forced Air Dryers
- Cabinet Dryers
- Prefab Kiln Buildings
- Cross-Circulation Veneer Dryers
- Roller Veneer Dryers
- Steam Generators
- Recorder-Controller Instruments
- Fan and Heating Systems
- Dry Kiln Doors
- Dry Kiln Paints
- Moisture Meters
- Kiln Check-Up Service Plan

MOORE DIVERSIFIED PRODUCTS MEAN MORE PROFIT FOR YOU!

MOORE DRY KILN COMPANY

MOORE SINCE 1879

JACKSONVILLE FLORIDA · BRAMPTON ONTARIO · VANCOUVER BRITISH COLUMBIA · NORTH PORTLAND OREGON

World's Largest Manufacturers of Drying and Handling Systems for Lumber and Veneer

News Notes In Brief

Weyerhaeuser Lumber and Plywood Div. Moves to Tacoma

General offices of Weyerhaeuser Company's lumber and plywood division—marketing will be moved from St. Paul, Minn. to Tacoma, Wash., according to an announcement made by Robert S. Douglas, division vice president.

The move will enable the company to effect maximum coordination of marketing with research, production development, and manufacturing activities, he said.

There will be no change in the location of the offices of the central sales region, nor of the general traffic department, which will remain in the division offices in the First National Bank Building in St. Paul. Neither will the move affect other Weyerhaeuser Company operations in the Twin Cities area, which include the Twin City distributing yard, Rilco Laminated Products, Kolorite shingles, container and carton division, Silvatek division or the lumber and building material stores division.

Effective date for the move will be approximately August 10, although dates for different departments may vary slightly. All employees are being invited to make the transfer. Douglas stated that the scheduled change will afford continuing and expanding opportunities for the employees to benefit in the progress of the company.

About 30% of Weyerhaeuser Company employees in the Twin City area will be affected by the move.

Onsrud Buys Berthelsen Hydraulic Press Division

Charles R. Onsrud, President, Onsrud Machine Works, Inc., Niles 48, Illinois, has announced the purchase of the Hydraulic Press Division of the Berthelsen Engineering Works, Inc., Joliet, Illinois. This purchase is the result of the company's recently instituted program of expansion and manufacturing diversification. The Berthelsen products line acquired by Onsrud includes heated-platen single and multi-opening presses for laminating plywood, reconstituted board products, metal, plastics and rubber. Manufacturing, sales and service will be carried out under the newly formed Onsrud Berthelsen Hydraulic Press Division. Key Berthelsen personnel are being retained. This new line is considered by Onsrud as an ideal addition to the products now manufactured and sold by the company's present Machine Tool, Woodworking Machinery and Portable Tool Divisions.

Set Furniture Show Dates

The Board of Governors of the American Furniture Mart at its semi-annual summer market meeting set the dates for the 1961 winter market for Friday, January 6 through Saturday, January 14.

Dates for the forthcoming fall market were set for Monday, October 17 through Friday, October 21. This market will be held simultaneously with the fall market of the Summer and Casual Furniture Manufacturers Association.

In other business at the meeting Kenneth Petrie, president of the St. John's Table Co., Cadillac, Michigan, was named chairman of the board and Alan Detweiler, president of the Continental Furniture Co., High Point, N.C., was named vice-chairman. Frank S. Whiting, president of the American Furniture Mart was re-elected secretary.

Officials pointed out that in the case of Mr. Petrie, history was repeating itself as his father George Petrie was board chairman during the years 1928, 1929 and 1930.

Clear Fir Sales Acquire Farley & Loetscher

The entities which own Clear Fir Sales Co. of Springfield, Oregon have today purchased a controlling interest in Farley & Loetscher Mfg. Co. and, therefore, also in its subsidiary corporations, Roberts Sash & Door Co. of Chicago, Illinois, Farley-Loetscher Co., of Sioux Falls, South Dakota, and Midwest Lumber Company of Dubuque which operates 29 retail lumber yards in Iowa and Illinois.

The new owners intend to modernize and stimulate our operations, to continue to manufacture the same high quality products in both millwork and plastics, and to give even better service to our customers.

Mr. Fred R. Loetscher will be General Sales Manager and Mr. Eugene A. Loetscher will be in charge of Finance and Office Management. Mr. Loetscher has announced they will continue under the same 85 year-old names, using their Qualitybilt, Farlite, and other Trade Marks.

NAFM Convention Meets Aug. 27-30

The National Association of Furniture Manufacturers' annual convention and trade show will open at the Conrad Hilton in Chicago on Aug. 27.

A wealth of exhibits will show machines, tools, components and supplies, many of which are entirely new lines while numerous others are newly introduced imports.

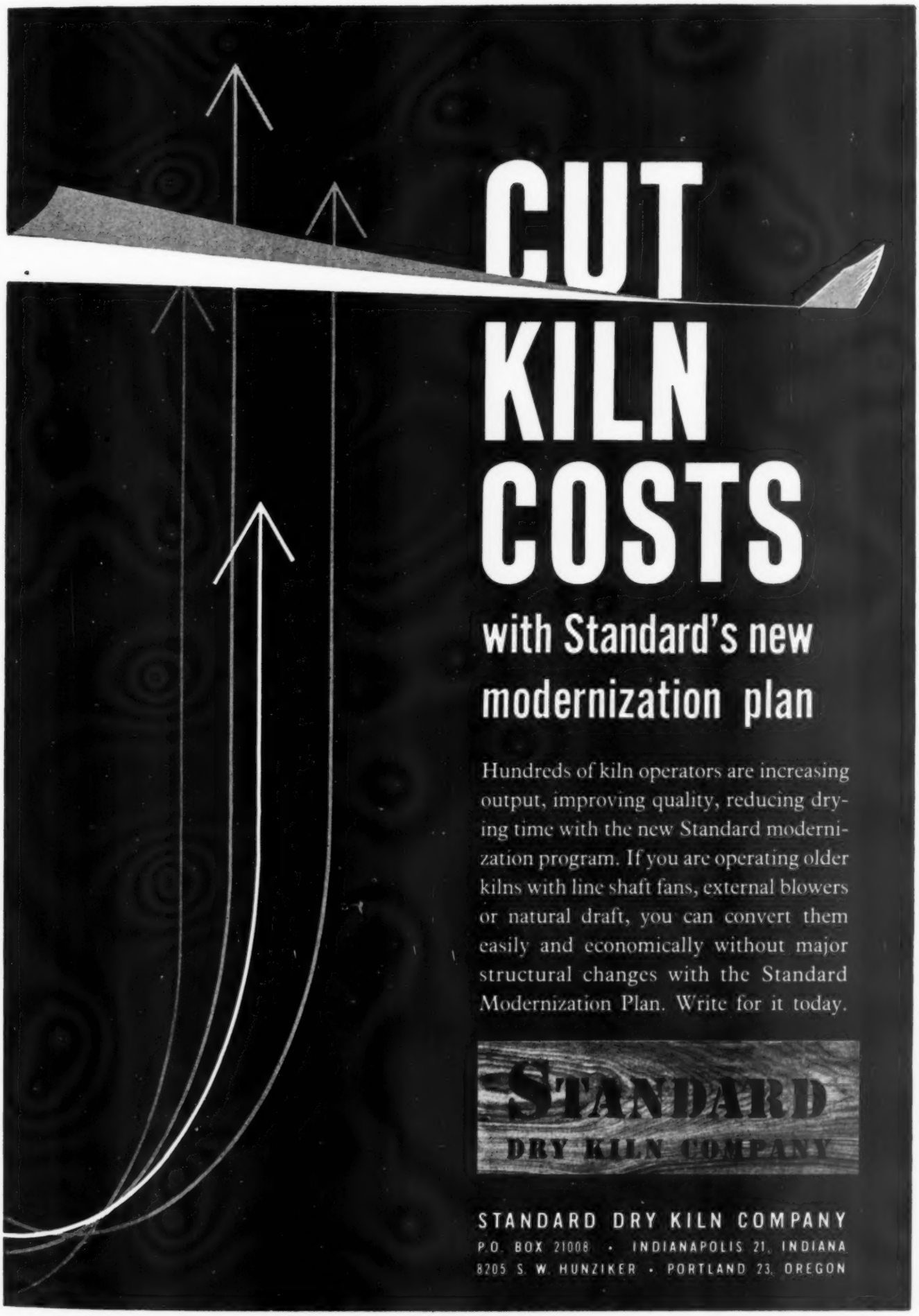
Leaders from industry will head up panels, clinics and other sessions, all integrated under a central theme: "Second Look Into the Competitive Sixties."

Our feature article on page 60 of this issues points up details of the convention and an interpretation of what it will mean to all in the woodworking industry.

L. J. Markwardt Named to ASTM Honorary Membership

L. J. Markwardt, consultant, of Madison, Wisconsin, and retired assistant director, U. S. Forest Products Laboratory, Madison, was honored at the 63rd Annual Meeting of the American Society for Testing Materials today at Atlantic City when he was presented with a certificate of his election to honorary membership in the Society. Presentation was made at the Society's national President's Luncheon at Chalfonte-Haddon Hall.

Mr. Markwardt is a native of Lansing, Iowa. He received his B.S. degree in civil engineering from the University of Wisconsin in 1912, and his C.E. degree in 1922. Following service as assistant city engineer of Madison, Wis., he joined the faculty of the Engineering College of the University of Wisconsin. At the U. S. Forest Products Laboratory since 1917, he has had a leading part in important research that has advanced wood as an engineering material. He is the author of numerous technical bulletins, papers, and articles in the field of wood properties, timber design and construction, forest products utilization and methods of testing, and is co-author of a textbook on descriptive geometry.


CUT
KILN
COSTS
with Standard's new
modernization plan
Hundreds of kiln operators are increasing output, improving quality, reducing drying time with the new Standard modernization program. If you are operating older kilns with line shaft fans, external blowers or natural draft, you can convert them easily and economically without major structural changes with the Standard Modernization Plan. Write for it today.
STANDARD
DRY KILN COMPANY
STANDARD DRY KILN COMPANY
P.O. BOX 21008 · INDIANAPOLIS 21, INDIANA
8205 S. W. HUNZIKER · PORTLAND 23, OREGON

Why Is Wood Best?

Response to the June article, "Why Is Wood Best For Boats," has been overwhelming! Before the issue had been in the hands of our readers for a week, we were literally deluged with requests for reprints. Many boat dealers have purchased copies of the article by the dozen.

Would you like to have a few additional copies? If so, the article is available as an attractive 8-page reprint at these prices:

100 copies or less — 20¢ per copy
500 copies — 18¢ per copy
1000 copies — 15¢ per copy

Send your requests to the editor.

We were unable to include this illustration in the

WOOD is naturally best
for boats
POUND FOR POUND STRONGER THAN STEEL
Unaffected by aging, vibration, sun, or corrosion
THE ONLY NATURALLY BOUYANT BOAT MATERIAL
No need for bulky, unreliable flotation chambers
UNEQUALLED FOR FLEXIBILITY AND ENDURANCE
Bends and re-bends without fatiguing or cracking
MOST ECONOMICAL BOAT MATERIAL
Costs less . . . holds value longer . . . improves with age
BEST IN SOUNDPROOFING QUALITIES
Wood is a natural sound deadener
UNMATCHED FOR DISTINCTIVENESS AND BEAUTY
Unending variety of natural wood grain and warmth of texture gives a wood boat a "quality look"
and now...
WOOD IS BETTER THAN EVER
New processes, new finishes, new adhesives, make wood rot-proof, shrink-proof, permanently water-tight, fire-resistant, more practical and beautiful than ever before.

article on wood boats. This is a tag being used by some wood boat manufacturers to point up the advantages of wood. Reverse side of the tag carries the manufacturer's name, or dealer's, and price.

Do you agree that wood is best for boats? If not, why? What do you think needs to be done to sell the public on wood for boats? Is there a carry-over to some other product made of wood?

In other words, where and how can we do a more effective job of merchandising wood products? We'll be glad to hear from any of our readers. This is a vital subject to all of us.

This Emblem
is important to you

SEAL OF INTEGRITY · WOODWORKING MACHINERY · WMMA MANUFACTURERS' ASSOCIATION · MEMBER

WMMA was created 60 years ago to improve the standards of the industry. Look for this emblem on machines . . . in magazine advertisements . . . in advertising literature. A brochure listing WMMA members and their products is yours for the asking.

WOODWORKING MACHINERY
MANUFACTURERS' ASSOCIATION
1900 ARCH STREET
PHILADELPHIA 3, PENNSYLVANIA

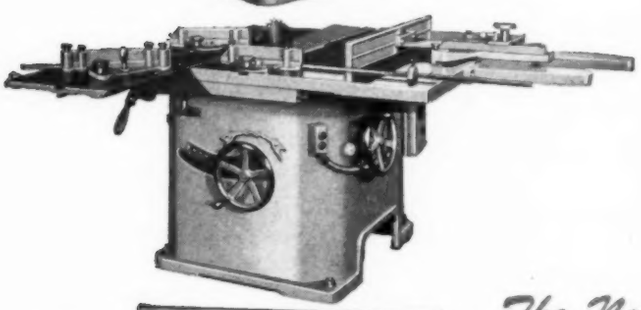
Carter
● GUIDES
● TIRES
● WHEELS
for finest performance on any BAND SAWS
also GUIDE LINE LIGHTS
See our ad in Hitchcock's Woodworking Directory or write for FREE CATALOG
CARTER PRODUCTS COMPANY, INC.
423 Helmer Bldg., 50 Market, N.W., Grand Rapids, Mich.

"Jorgensen" TRADE MARK REG U.S. PAT. OFF.
HOLD-DOWN CLAMPS*
mount where needed—on any work surface—drill press, wood or metal table.
Holding-bolt installs easily in workbench, machine table, "T"-slot or sawhorse. Clamp slides "on" or "off" holding-bolt in seconds—on the job when needed—out of the way when not in use.
*NEW ADDITION to the famous "Jorgensen" and "Pony" lines
write for information and catalog
ADJUSTABLE CLAMP CO.
"The Clamp Folks"
418 N. ASHLAND AVE., CHICAGO 22, ILL.

MODERN Woodworking's Workhorses

SO VERSATILE **they pay for themselves in a hurry!**

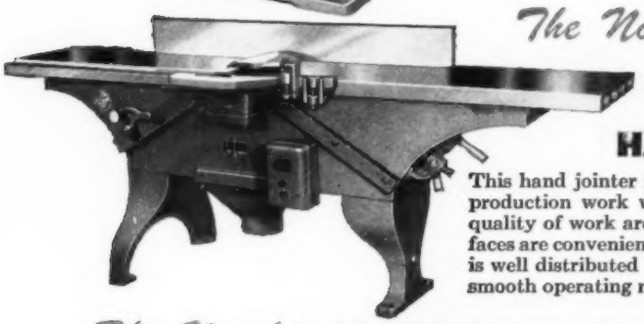
SO DEPENDABLE **they deliver years of trouble-free service!**



The Northfield NO. 4 VARIETY SAW

Tilting Arbor Type

The NORTHFIELD No. 4 Variety Saw is a carefully designed, quality machine with the latest features. It offers maximum versatility for all around sawing in any shop. In addition to wood it's adaptable for cutting light metals, plastics, etc. The table on the basic machine is 44″ x 36″ plus a 19½″ extension for carrying the rip gauge table. One or more 12″ table extensions can be furnished to increase table size. A rolling section table is also available. You'll like this machine for its versatility, heavy duty capacity, ease of handling, and speed with precision.



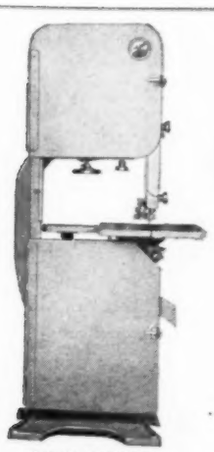
The Northfield HEAVY DUTY HAND JOINTER

This hand jointer is designed and built for production work where accuracy and fine quality of work are essential. Working surfaces are convenient to the operator. Weight is well distributed to make a well balanced smooth operating machine.

The Northfield MEDIUM DUTY HAND JOINTER

These jointers are built in the 8″ and 12″ width. They are designed for the most particular kind of work. They are compact, accessible and offer fine performance at reasonable cost.

WRITE TODAY FOR LITERATURE AND PRICES

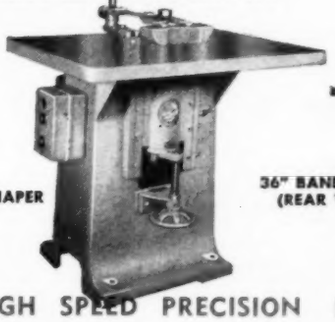


20″ BANDSAW

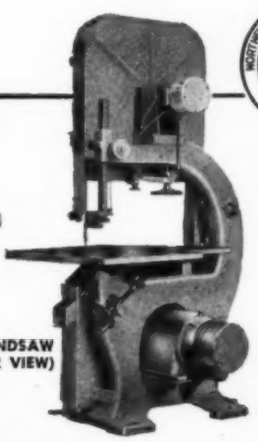
Northfield

FOUNDRY & MACHINE CO.

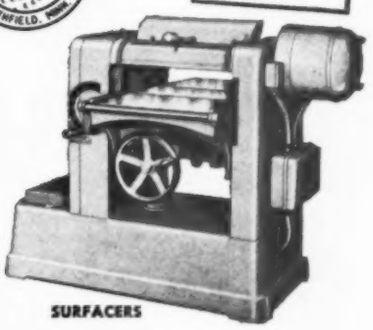
NORTHFIELD | MINNESOTA



SHAPER



36″ BANDSAW (REAR VIEW)



SURFACERS

MANUFACTURERS OF HIGH SPEED PRECISION HEAVY DUTY WOODWORKING EQUIPMENT

United States Will Host World Forestry Congress

The 5th World Forestry Congress is to be held on the campus of the University of Washington, Seattle, Washington, August 29 to September 10, 1960, with the United States Government as host. This is the first held in the Western Hemisphere. Previous Congresses have been in Rome, Budapest, Helsinki, and in Dehra Dun, India.

Governments of more than 80 countries have been invited to send official delegations. Participation also is open to private persons associated with forestry, forest conservation, forest utilization, and international organizations of scientific, technical or educational interests in forestry.

Over 2,000 foresters from around the world are expected, while over 50 nations have already formed national committees to promote the Congress in their countries. Our own Government participation will include commemorative stamps, White House representation at the meetings, a Department of State secretariat of 80 people, and special stamp cancellation used by U. S. Post Offices. An international tree planting ceremony is planned.

Machinery, equipment and educational exhibits are to be featured. More than 200 technical and volunteer papers are to be presented.

Two pre-Congress and five post-Congress tours will enable foresters to see America's forest industries, forest research installations, and forest resources in Alaska, Northeastern, Southern, Western, Southwestern, Rocky Mountain, and North Central States areas.

Inquiries for further information and reservations should be directed to: I. T. Haig, Executive Secretary, Fifth World Forestry Congress, c/o Office of International Conferences, Department of State, Washington 25, D.C., United States of America.

Northeast Ohio Machine Builder In New Quarters

The ultra modern Engineering and Administrative offices of Northeast Ohio Machine Builders, Inc., are now officially open for business. Friends, business associates and customers attended an open house June 1, 2 and 3.

Northeast designs and builds special machinery for the forest products and metals industries. Staffed with a close-knit group of sales and design engineers, Northeast offers its services in a wide territory.

The new building is located at 330 North Main Street in Columbiana, Ohio.

Woodworking Trade Show To Be In New York

Do you know everything you need to know about woodworking equipment, machines and accessories? Whether you do or not, circle these dates on your calendar—October 6-8, 1960. Next, be sure to be in New York City on these dates, and plan to visit an important woodworking trade show.

The show, sponsored by Rudolf Bass, will be held at the Sunnyside Garden Arena, Queens Blvd. and 45th Street, Long Island City, New York. The event is planned to include exhibits, demonstrations, lectures, motion pictures and a free buffet supper.

As we go to press, there are approximately 50 exhibitors, with the show management expecting additional reservations before the closing date. Equipment will vary from abrasives and clamps to panel saws and bending presses. This is not a show for supplies only, machinery under power will be on display.

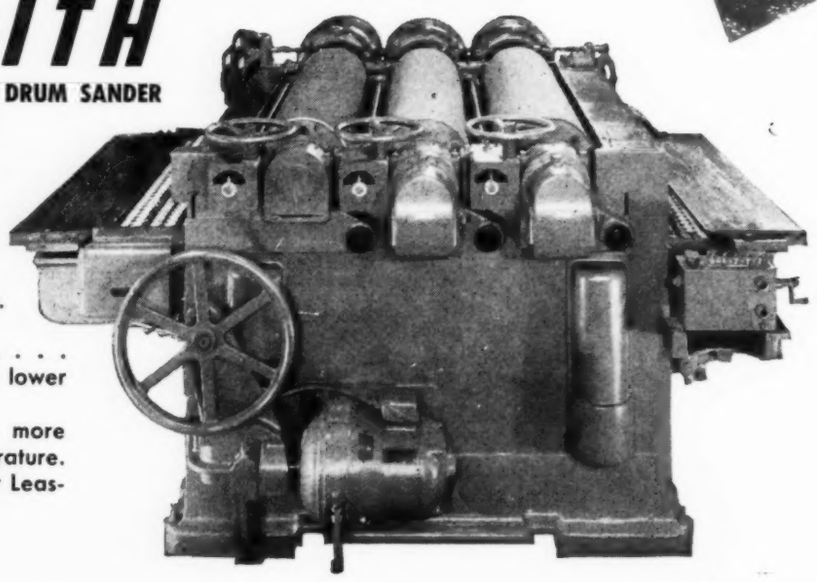
The lectures and motion pictures are sufficiently technical to provide everyone with new information. Here is your chance to hear the experts and see new equipment in use.

For additional information write to Rudolf Bass, 173 Lafayette St., New York 13, N.Y. Be sure you have a ticket as admission will be by ticket only. The show will not be open to the public.

COPIED . . . NEVER EQUALED

THE SMITH

ENDLESS BED DRUM SANDER



EXCLUSIVE FEATURES on Smith 2, 3 and 4 Drum Endless Bed Sanders include:

- Self oscillating drum mechanism.
- Simple, positive BED adjustments.
- Simple, positive DRUM adjustments.
- Handy location of all hand wheels.
- Sanding thickness to close tolerances.
- Totally enclosed motors.

RESULT: High quality sanding . . . Efficient Production . . . and lower costs

Write, telephone or wire for more information and helpful literature. Also ask about our 3 or 5 year Leasing Plan. Do it today!

WOODWORKING MACHINERY MANUFACTURERS' ASSOCIATION WMMA

H. B. SMITH MACHINE CO.

BURLINGTON COUNTY, SMITHVILLE, NEW JERSEY

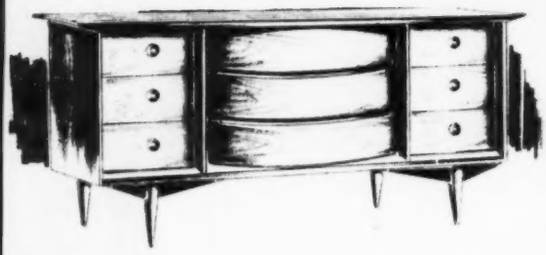
...promoting the superiority of WOOD by maintaining the highest standards of quality!

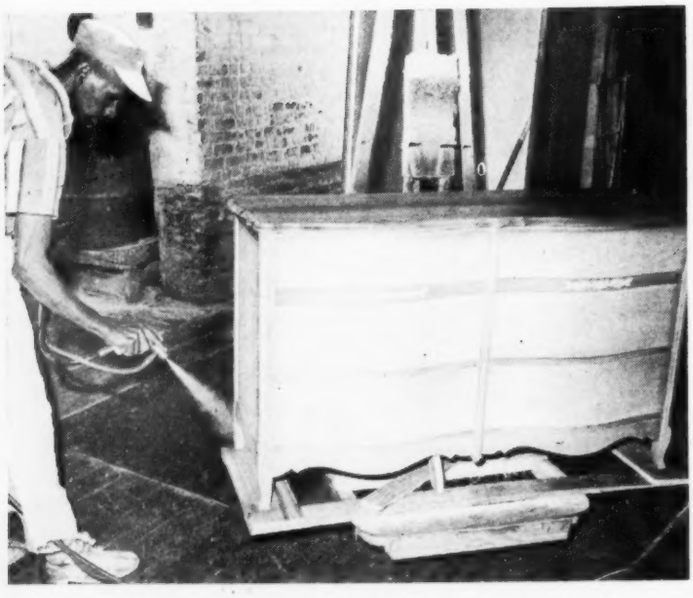
South Central Hardwood Lumbermen's Club

Below are listed the sawmills in the South Central area which take pride in manufacturing lumber of superior quality . . . and which are interested in serving your needs.

RALPH ANDERSON LUMBER CO	NEW MADRID, MO.
ASHBY VENEER & LUMBER CO.	JACKSON, TENN.
COLEMAN LUMBER CO.	JONESBORO, ILL.
DIXIE DAN LUMBER COMPANY	McKENZIE, TENN.
E. P. FLETCHER LUMBER CO.	CAIRO, ILL.
MID-ILLINOIS LUMBER CO.	JONESBORO, ILL.
JACKSON SAWMILL CO.	JACKSON, TENN.
M. E. LEMING LUMBER CO.	CAPE GIRARDEAU, MO.
THOS. McFARLAND LUMBER CO.	CAIRO, ILL.
MILLER & CO.	JACKSON, TENN.
SOUTHERN STAR LUMBER CO.	McKENZIE, TENN.
WALDSCHMIDT LUMBER CO.	WICKLIFFE, KY.

For information about any advertised product, see the Advertisers Index and Action Card inside back cover





Ambitious spray operator moves ahead of spray booth work station for preliminary touch up "sap staining" ahead of major stain.

Major staining is handled in this first spray boo All five standard stain materials are ready here wit gun for each standing by as hangers move throu

The spray minu

by Darrell Ward
Engineering Editor

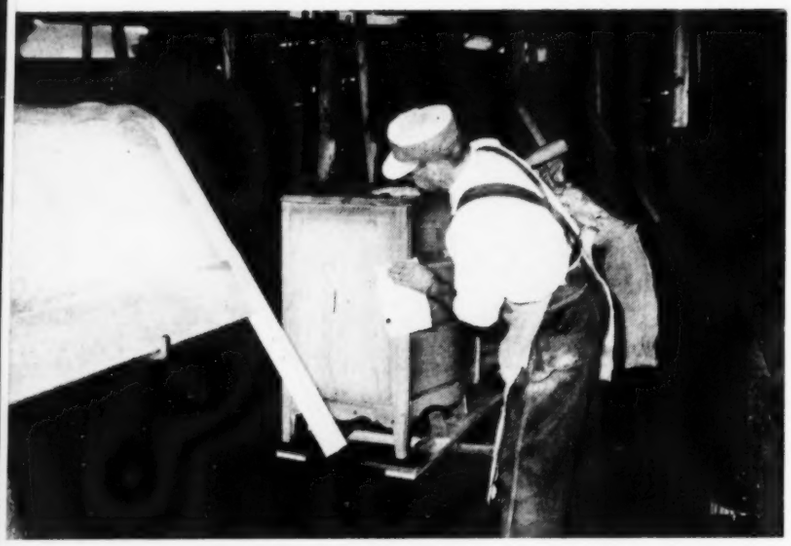
Bassett Standardizes with Variety, Flexibility, Quality and Volume

We have a good thing in wood furniture. So, let's promote it properly to an uneducated public and we can realize the profit we feel we deserve. It is the competition that says, "This is just as good as wood." Or, "This is just like wood." Wood carries its own traditional prestige, so we must all pull together to preach, prove and demonstrate to consumers what we have to sell.

There are a number of leaders in wood furniture who have made themselves heard on the subject of what is needed promotion-wise. They have preached, they have joined campaigns, they have encouraged and advised competitiors, and they have frequently been denied the reward of cooperation where it would help most. A leader of any com-

The wash coat is applied in this spacious water-washed spray booth after stain has air dried for about 30 minutes. The wash coat is pigmented lacquer sealer.

Like all other spray booths at Bassett, the wash coat booth has a pressure barrel and individual pumping equipment for each material used, all standardized.



Wash coat air dries during a 30-minute run to the filler booth where, just prior to filling, the merchandise is lightly sanded all over with garnet paper as shown here.

petitive industry cannot afford to sacrifice his own interests to play saviour to the rest.

Look to a leader

If we would presume this principle to hold true in competitive business, and particularly in the furniture industry, we would look to the biggest names which have enjoyed an enviable reputation over a longer period of time to set an example for the rest of us.

Bassett Furniture Industries is reputed to be the world's largest manufacturer of wood furniture. Bassett has been reaching for 60 million prospects every month through advertising in LIFE and LOOK. Bassett has been working on the theory that selling the consumer on your merchandise before it goes into a dealer's store makes the customer a more ready buyer. Bassett has been offering wide variety in style and finish to please most any prospective buyer in the consumer market.

Bassett offers variety

A recent tabulation shows that Bassett currently makes over 1,000 different pieces of furniture when you count all the different styles and finishes. The company had over 50 different designs on exhibit at the Spring High Point Market. These included Rural English, French Provincial, Danish Modern, 18th Century and American Colonial, Italian Provincial, Far East and Modern bedroom and dining room suites and groups, tables and chairs. They brought out more different designs and styles and included more pieces available in each suite or group. Over 250 items of occasional wood furniture, including Danish chairs and settees, desks, sectional sofas, gossip benches and occasional tables fill out the line.

The various fillers used are all available in this booth for the mixture of merchandise in production.

They help the dealer

Assisting the dealers at local levels, the company supplies ROP mats for use in local newspapers, mats for full size newspaper pages adapted from dramatic advertisements run in LIFE and LOOK.

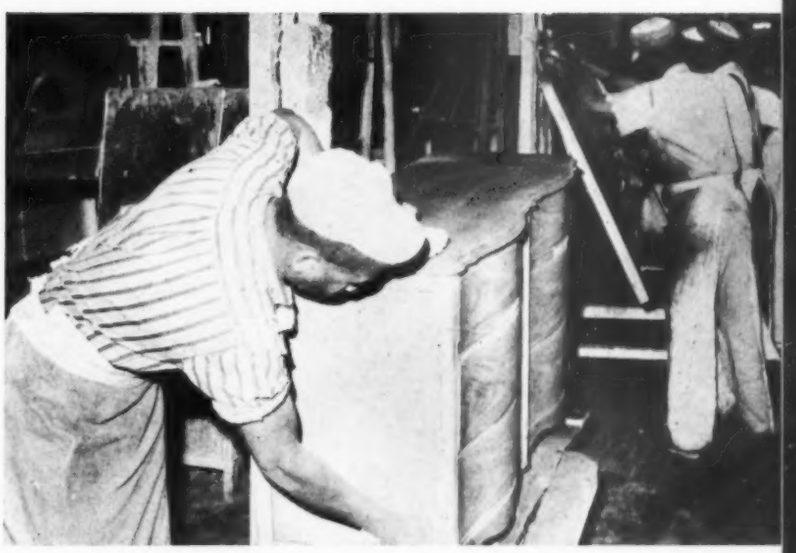
Bassett pulls no punches in presenting a whole page layout devoted to an all white ensemble. They swing an effective feminine attraction with references to color in terms of "Stardust," "Modern Oak," "Cordovan," "Tangier," and "Sapphire Mink."

"Of course," you say, "someone like Bassett can swing a mighty punch with plenty of power to back it up. But who can afford the terrific overhead costs and the unlimited facilities, to say nothing of the wide variety of materials, to bracket the whole market and take a swing at every customer on the street?"

Good Management Utilizes Available Facilities

That is one question we wanted to ask, too. We visited Bassett to see what was going on behind all this hard-hitting promotion program, and you know what we found? Management was using

Filler pading is done as hangers move along just outside the filler spray booth.



Filler wiping immediately follows padding, with an adequate team for thorough wiping of any size or shape merchandise.

good hard-headed business sense in coordinating available facilities and squeezing more variety out of imagination and design technique than out of varieties of materials. They were doing not much more than any ordinary adequate plant can do—with as much imagination and purpose behind the effort. It was a matter of close quality control, segregation of different quality groups into different operations, standardization of basic equipment and materials, and utilization of the available talents from their designer, their own executive and ad agency personnel, and most efficient production from their facilities.

In addition to Bassett Mirror, Bassett Table, and Bassett Chair Companies, there were five major furniture plants of the type we visited. Our object of inspection was one of the two—J. D. Bassett Mfg. Company's plants which makes the top of the line in French provincial, Italian provincial and traditional. The other three are Bassett Superior Line, Bassett Furniture Co., and W. M. Bassett Furniture Co.

Bassett Operations Are Decentralized

Each of the five major plants is equivalent to almost any average furniture plant. Each is set up in a similar manner with similar, almost interchangeable, basic equipment. Each is similarly quality controlled, but geared to a different quality level. Normally, workers and facilities are not used interchangeably. They are kept completely separate, as if they were completely separate companies, in order to avoid undesirable carry-over from one quality level to another.

However, since basic equipment and functions are standardized throughout the organization of "The Industries," if an emergency should arise they are ready to meet abnormal market demands by a quick shift from any one line to another by any of the five plants. A change in cuttings here, a doubling up of inspection points there, a speeding up of a line at another point, and, perhaps a few phone calls back and forth will throw the whole force into high gear without throwing terror into the hearts of management or workers. The chair and table plants are as flexible in their own way.

Standardization Gives Practical Diversity

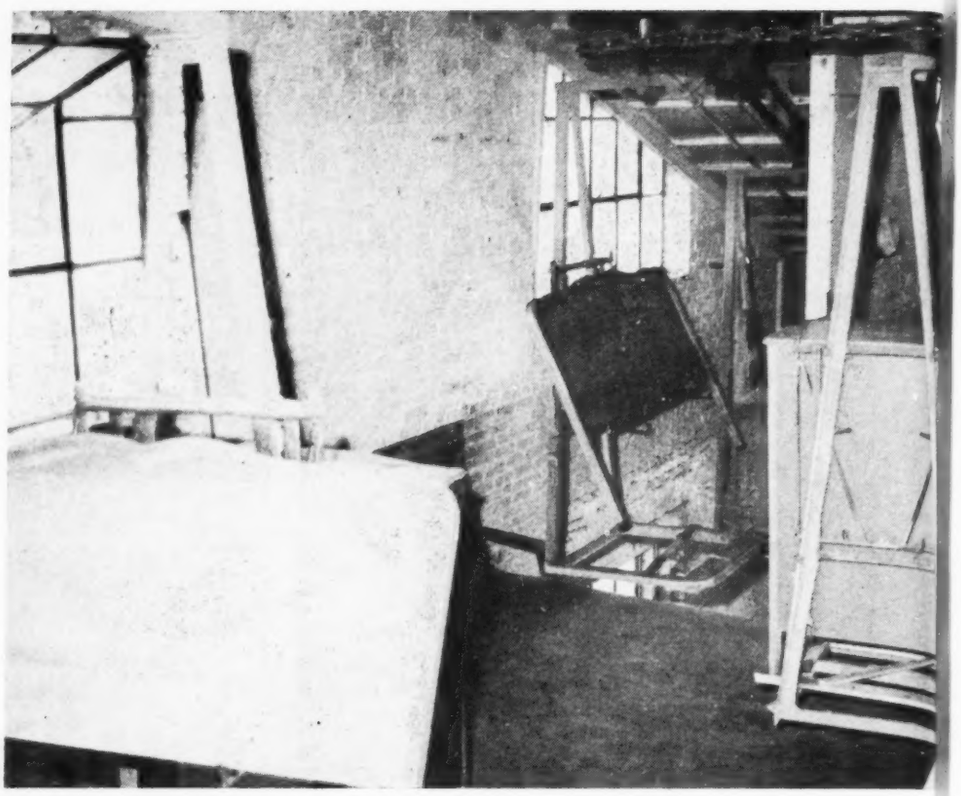
We were surprised to learn that a company this well known, said to be the world's largest, and the envy of many for their hard-hitting advertising, could extract such wide appeal from so many different levels of consumers with such relatively few, standardized materials. Here's a run-down on what they use:

Cores are standardized in poplar with veneers of cherry, maple, African mahogany, butternut, walnut and oak.

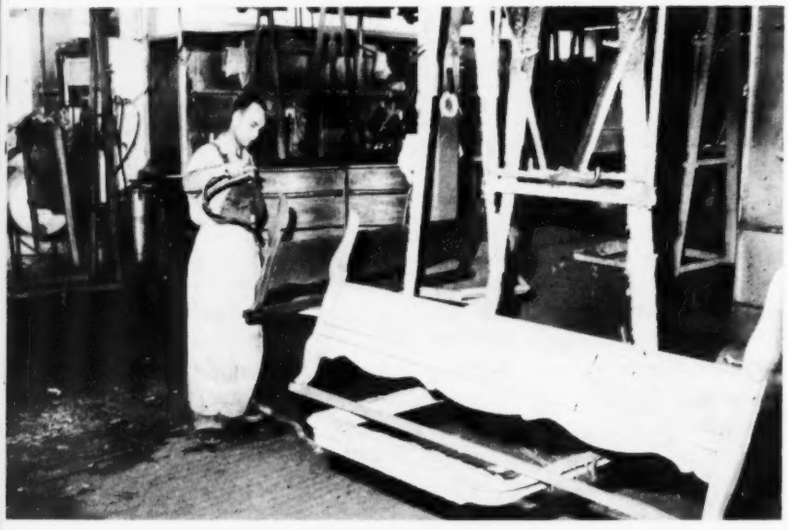
Solid materials include tupelo (white gum), poplar, mahogany, hackberry, walnut and oak.

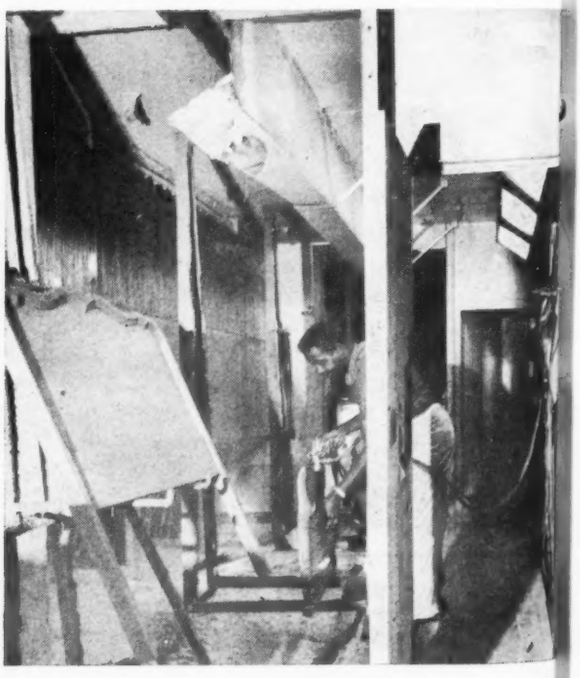
Finishes are standardized in lacquers from two suppliers (DuPont and Grand Rapids Varnish).

After 15 minutes of filler drying by air on the finishing floor, the conveyor dips down through to the filler drying oven below where complete drying is accomplished in 63 minutes at 120°F.

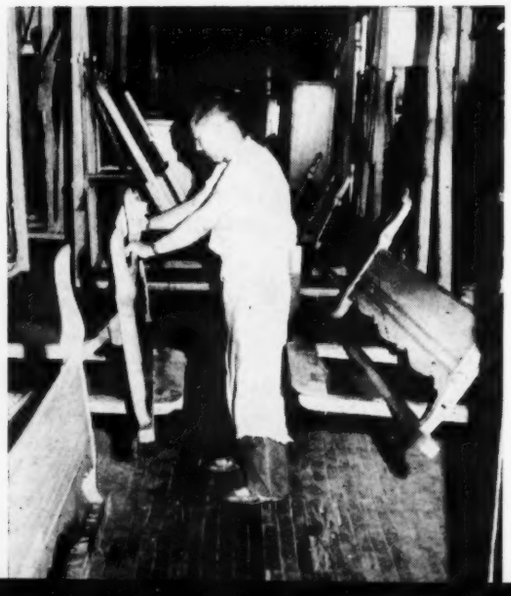


A major inspection point is this work station, ahead of sealer spray, where the inspector will touch up minor blemishes after filler drying, or will apply strips of tape on spots in need of repair.

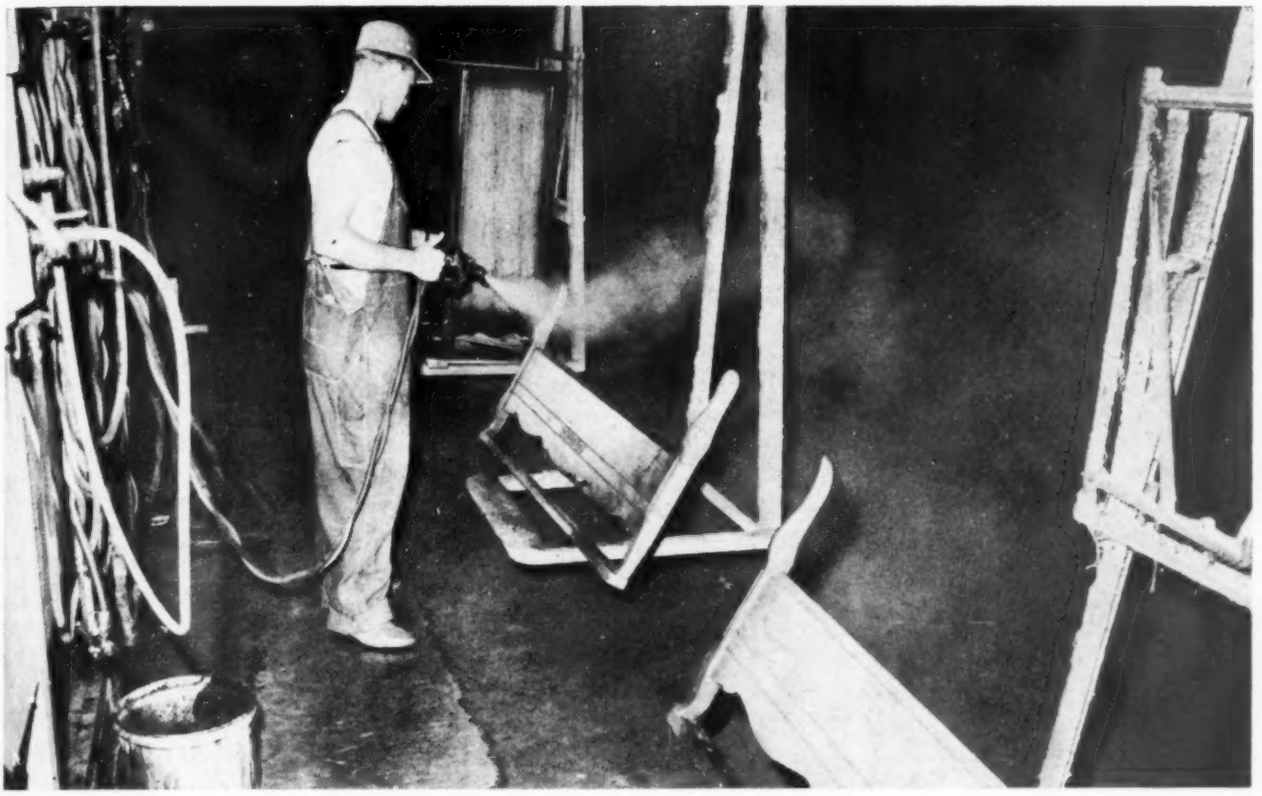




If goods pass inspection, stearated sealer is applied here. If tape appears on the piece, indicating need for repair, no material is wasted on the piece. The lacquer materials, such as this sealer, are all purchased in 24% solids and sprayed full density to obtain good build.



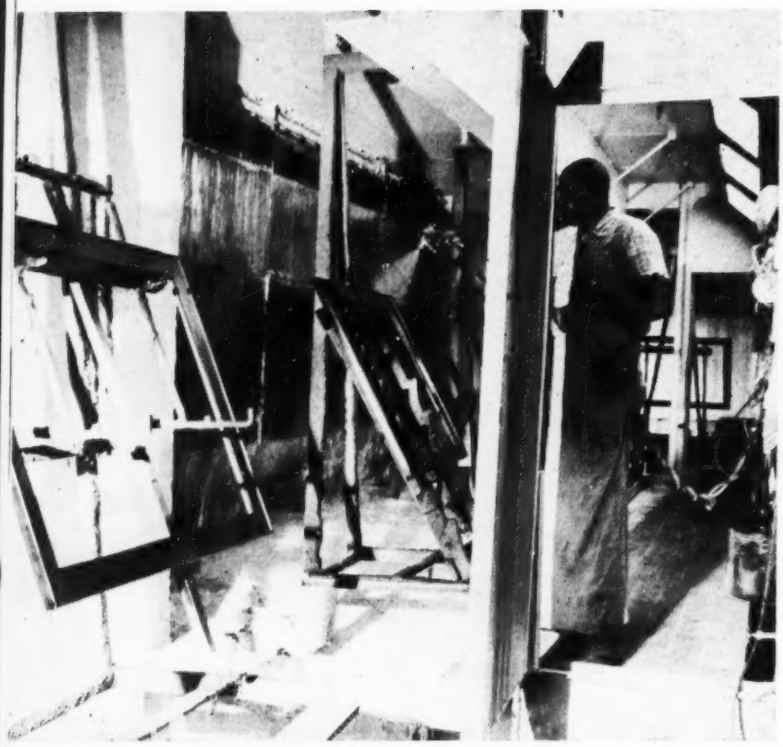
Sealer is dried for 1-hr. 33-min., including flow out and oven drying, after which it cools for 36 minutes before arriving at the first lacquer booth. Hand sanding with garnet paper is done along cooling line before conveyor turns into the lacquer booth.



The real art of the finish also appears between sealer and lacquer in this glazing and later shading operation.

Here is where the real artist of the finishing department displays his talent with 15 different spray guns and associated pumping equipment available to apply the standardized shading materials which can produce an infinite number of color combinations.

Glazing is wiped in a short run between glaze spray and shading.



First lacquer or build coat is applied here and then permitted to air dry for about 27 minutes ahead of final lacquer.

Gilbert Spruance supplies stains and toner materials. High gloss is used on modern, pigmented for some provincial lines and natural fruitwood for others.

High gloss appears in mahogany, and a sienna with gold mist is used on modern styles where surfaces provide easier access for rubbing. These finishes are standardized in process with two gloss coats of lacquer, the last being rubbed—except in some styles.

Pigmented finishes provide a wealth of variation, being standardized in a white base with gray shading.

The natural fruitwood provincial finishes are all built up on cherry in about four different tones ranging from light to medium, with top coats of satin finish lacquer on hard-to-rub parts and gloss on flat surfaces which are all hand rubbed to match.

While the rest of the industry stands by gaping at Bassett's progressive developments in style and color, to say nothing of their aggressiveness in promoting the appropriate piece of wood furniture to every potential consumer, it is a bit shocking to learn that much of this evolved from ingenuity and imagination—certainly not merely from a wealth of materials. The system has been standardized for about 12 years!

One Separate Floor Is Devoted To Finishing

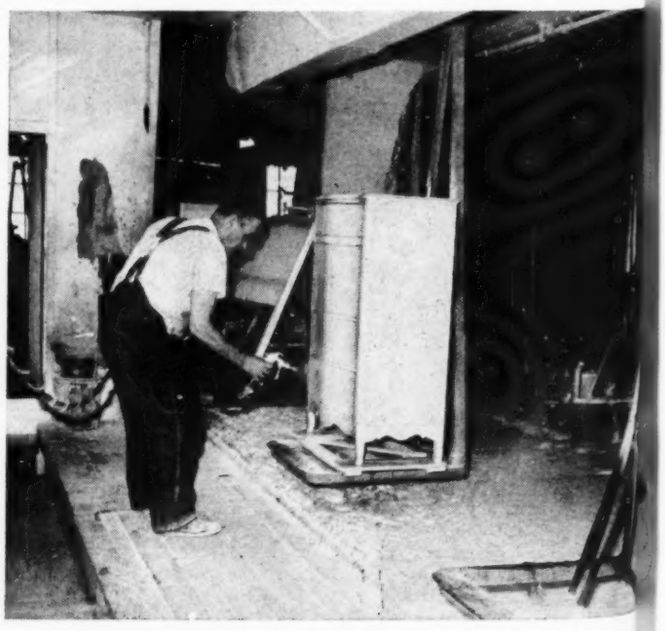
Finishing is done on a floor separated from other operations of the plant. White goods cleanup and inspection is handled on the floor below at the end of the assembly line. There is no white goods storage.

Merchandise moves up to the finishing floor on uniform hangers of the Palmer-Bee overhead monorail conveyor at the rate of 18 to 24 f.p.m. It takes one of the 944 hangers approximately 6½ hours to complete its cycle in the actual finishing department section of the 7,000 ft. of total run. Six 3 h.p. 220v d.c. variable speed motors drive the conveyor and are themselves powered from a 220v d.c., 20 h.p. generator system.

Adequate Spray Equipment Makes Flexibility

DeVilbiss water-washed spray booths, one for each operation, are spaced along the conveyor line according to normal time cycles of flow-out and drying required between. DeVilbiss spray guns are supplied to each booth in multiple quantities to make spraying of different colors or materials most flexible. The shading booth is equipped with 15 different guns. An operator can select the appropriate gun for a given piece of merchandise of any style or color that may be next on the line. This facility eliminates the need for running a particular style or color separately from others and, therefore, provides for continuous production without delay on any size order.

Final lacquer is applied here with plenty of work space and adequate lighting in a large water-washed spray booth. The final coat is permitted to flow out, air dry for 21 minutes, then oven dry at 150° for 54 minutes. After cooling, mechandise moves into rubbing department for hand rubbing and packing both on the same slat conveyor.



Materials are pumped from a fireproof central bulk storage building in the yard of each plant to individual pressure barrels at the spray booths. Each spray gun is supplied from its own barrel by Graco pumping equipment.

Trouble Can Be Pinpointed

Each operator at the spray booths has controls which permit him to stop or start the conveyor as needed for a workpiece or for emergency. Any time the conveyor stops, a signal light glows at the foreman's desk to indicate where the line has been stopped or where trouble may exist. This saves much "tracking down" time when it does occur.

Bassett considers basic wood and applied finish of equal importance to the quality of the merchandise. This differs from some plants we have visited where the entire focus of attention was on the appearance of the finish.

Quality Control Is Added To Inspection

In addition to regular inspectors throughout, there are two full-time quality control men over the entire plant to see that operations and subsequent inspections are carried out according to specifications. The line begins with two inspectors working at final cleanup before the finish is applied. There are four other inspectors at strategic points along the actual finishing line, and there are two more inspectors on the rubbing line between finishing and packing.

If rejects should occur along the line, they are not marked with chalk as is the custom in many plants. Instead, the piece is marked with a strip of masking tape over the defect and another strip of tape on the leading edge as it moves on the conveyor. This kind of marking can be seen from a distance and indicates to workers in the finishing department that they are not to waste any more material on that piece. It will move right on through without further attention until it returns to the cabinet room where repairs are made. No side tracking or shifting of rejects occurs to slow down the line. Everything moves at an orderly, persistent rate.

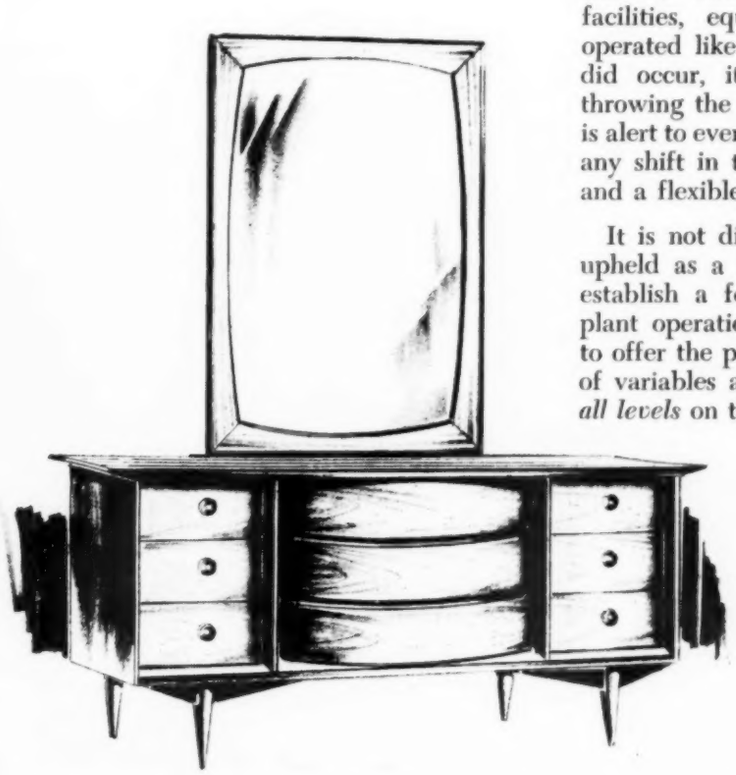
When repairs are made in the cabinet room along the assembly line, the workpiece is again placed on the conveyor to return to the finishing floor. It then will follow the normal full cycle through finishing. Every step in the process will be performed as necessary to conform to the normal finish of that piece.

The fact of the matter is that rejects are so few we had difficulty in spotting any at all on the floor at the time of our visit. The few that do occur are principally mechanical which are not apparent in white goods but may show up after stain or other finish applications. Occasionally if filler is not properly padded and wiped some repair may be necessary.

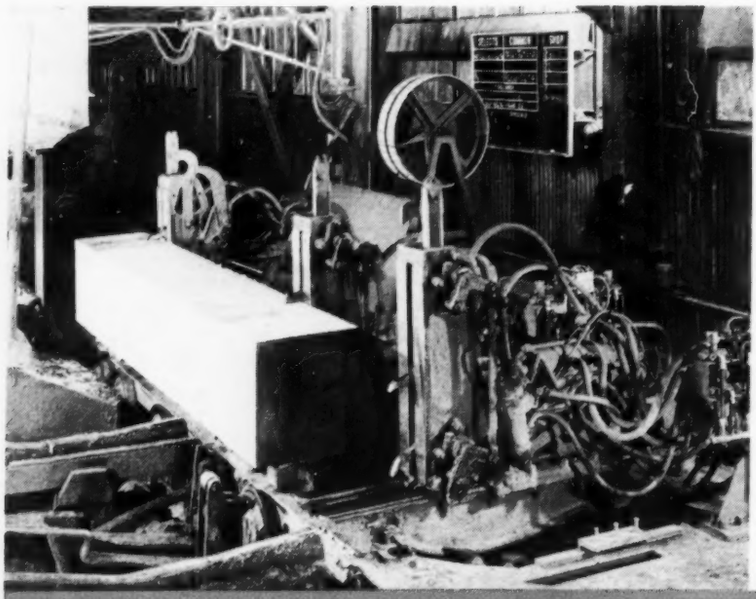
Bassett Produces Quality In Volume

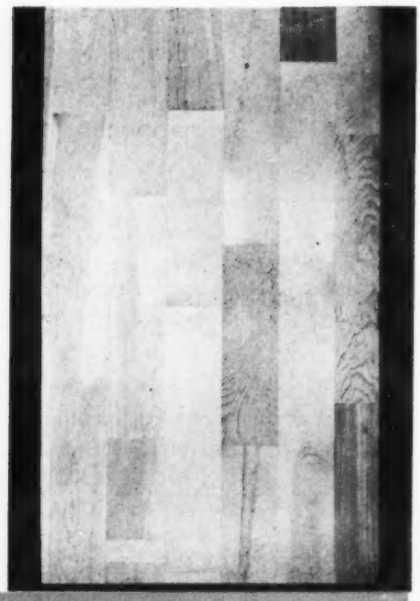
However, the over-all feeling of the entire plant was one of a combination of factors not frequently felt: quality and high volume. We would attribute this to efficient management of standardized facilities, equipment and materials. Everything operated like a well-oiled machine and if trouble did occur, it was spotted immediately without throwing the entire plant out of operation. Bassett is alert to every possibility and is prepared to handle any shift in the situation with flexible equipment and a flexible attitude.

It is not difficult to understand why Bassett is upheld as a leader when you see how they can establish a feeling of well being backed up by plant operations. Then the company goes all out to offer the public a wide variety with a minimum of variables and also educates the public taste *at all levels* on the desirability of wood furniture. □



For information about any advertised product, see the Advertisers Index and Action Card inside back cover



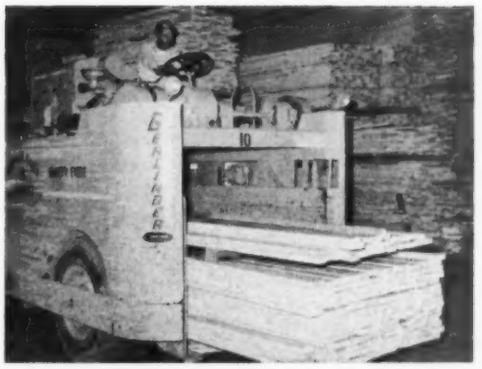


Shorts and scraps from this type of raw material will be used to make-up end-glued and edge-glued panels like the one at the right.

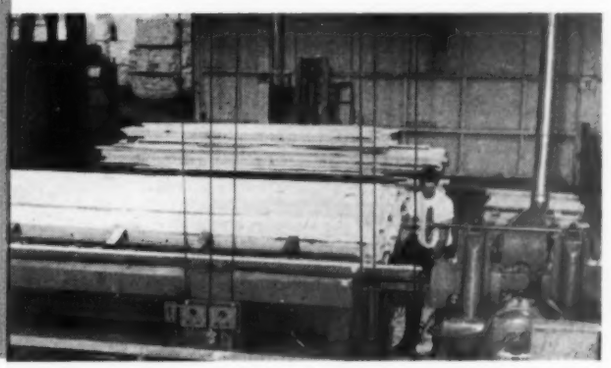
Hines Makes Full-Sized Boards From Shorts and Scraps

By Bert Goldrath
West Coast Editor

Out in the middle of nowhere—on a broad plateau in eastern Oregon, to be exact—Edward Hines Lumber Company is going full blast on production of highly marketable wood panels and boards. Nothing remarkable about that except that the raw material, worth next to nothing, is fabricated from random small pieces into full-size boards and panels at least six times as valuable!



Gerlinger lumber carrier totes load of blanked stock into Hines edge- and end-gluing plant near Burns, Ore.



One of a pair of heavy-duty Mereen-Johnson gang rip saws is first stop for the material. The stock is cut here in widths varying from 2¼"–8" wide.

Cabinetmakers, building contractors and other wood workers no longer need be delayed by shortages of proper materials. Any size within a wide range of dimensions can be custom-manufactured by the Hines plant in substantial quantity. The plant can produce panels, boards and moldings to meet exact specifications, thus eliminating much waste and some waste transportation costs. Material precut to order also saves the woodworking shop or builder some of the high cost of labor in the field or in the shop.

About 85% of the odd-sized small pieces coming off the green chain, the dry sorting chain and from the various remanufacturing operations on the site is Ponderosa pine; the balance is mainly fir and larch.

Material to be glued-up is stored in part of a 2800′ long shed adjacent to the Hines woodworking factory. Handling is expedited by means of overhead cranes, a lumber carrier and fork lift trucks. When scheduled for production, pallet loads of lumber are transported into the factory. Here they are stored in an alcove at a temperature of about 75°.

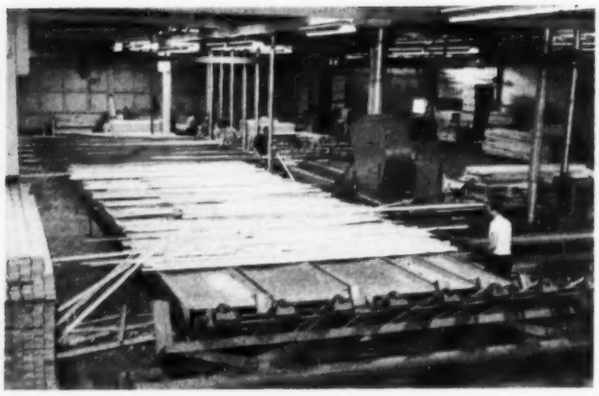
Pieces down to 2¼″ wide and 12″ long, or as wide as 8″, are finger-jointed and end-glued. A portion of this production is in turn diverted to the panel assembly line for forming into sheets as much as 50″ wide by 24′ long. Maximum width that can be easily handled is 50″, and the maximum thickness is 8/4 (2″). However, these limits may be stretched for special orders. Thickness up to 4″ is conceivable.

There are two distinct production lines for end-gluing. The first was installed when the plant was set up in January, 1959, and produces 24′ end-glued boards. The second line went into operation eight months later for production of 16′ boards. This approximately doubled the total output.

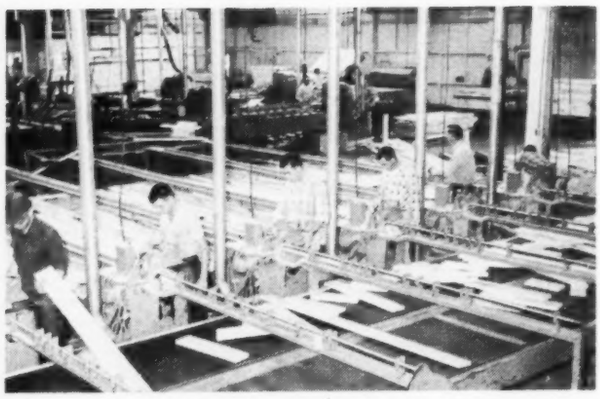
Production in the 50-man, 40,000 sq. ft. factory hits 30,000 to 35,000 board feet for each of the two daily shifts, five days a week. Edge-gluing of panels averages 10,000 to 12,000 board feet per shift. A considerable part of the finger-jointed end-glued stock is diverted to a molding operation set up in the adjacent shed. The longest pieces are set aside for eventual machining into door and window casings and various other types of interior trim. It is necessary to scrutinize the molding rather closely to be able to see the finger joint, and of course it wouldn't be seen at all under a painted finish.

Insofar as structural strength is concerned, it is felt that there is no significant difference between the edge- and end-bonded products and their solid wood counterparts. To demonstrate the point, two edge-glued pieces were broken apart over a metal stanchion. They separated in the wood, not at the glue line.

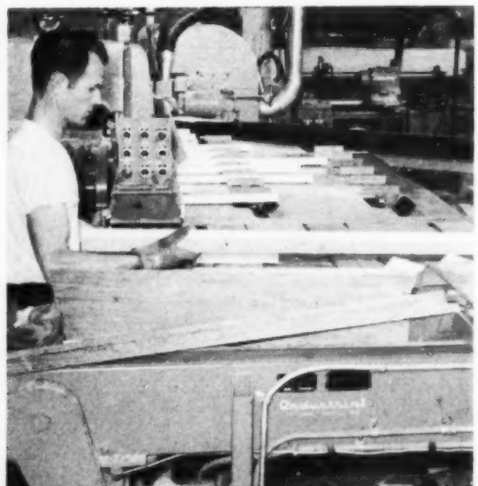
Referring to the marketability of glued-up panels, a company spokesman said, "We can sell this product for, let's say, $50 a thousand less than wide

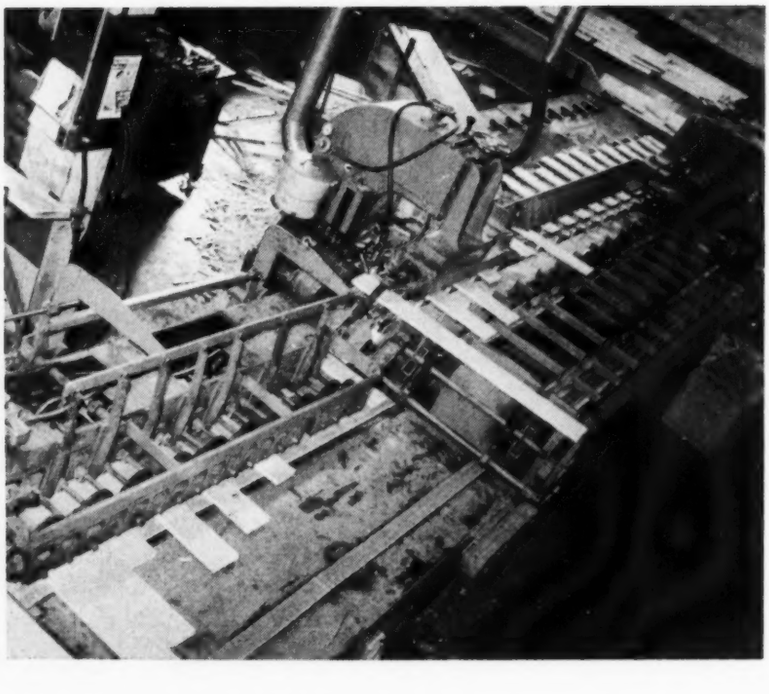


Tilt lift unloads stock unto a 72′ sorter-conveyor.



Six cutoff saws trim out undesirable sections.



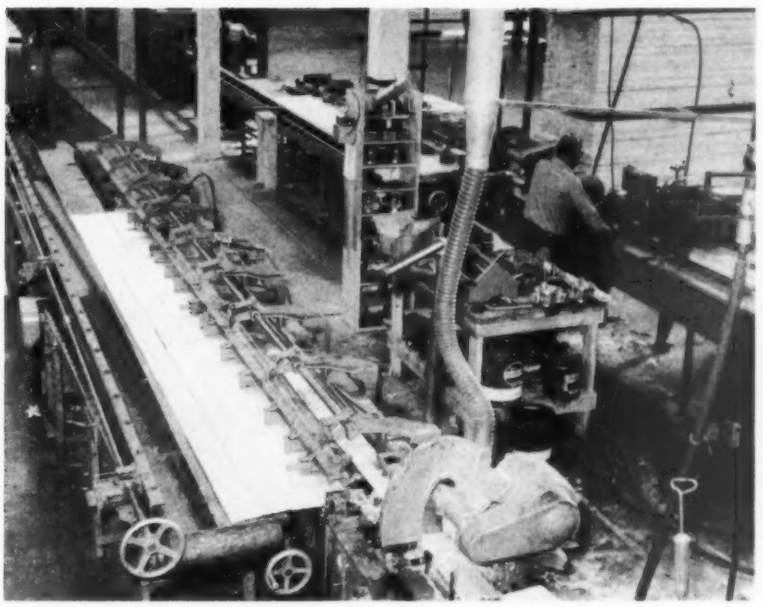


Stacked by fork lift (above left) on roller conveyor at the right, stock moves to breakdown hoist at head of one of the two shaper lines.

Workman feeds stock into dual-head jointer which shapes first the left, then the right hand finger joint. The stock then passes to glue applicator wheels.

Jointed stock (left) is seen emerging from the dual-head jointer.

Factory superintendent Harvey Pierce (left) and Ray Jackson, assistant general manager, inspect finger jointed pieces.



Stock moves from assembly table through crowding rolls into chop saw (foreground). Parallel line is in background.

clear solid lumber. Further, we give the customer the exact size he wants. Actually there should be no reason for the glued-up panels to sell for a lower figure than solid lumber. What could be better for a customer than to get a waste-free wood product cut exactly to his requirements?"

How this seemingly contradictory feat of producing custom materials on a production basis is achieved is a fascinating study in automation and plant engineering. All possible operations are carried out with a minimum of manpower.

Actual production begins when the temperature- and humidity-controlled lumber is stacked on tilt lifts feeding two Mereen-Johnson gang ripsaws which rip from 2¾"—8" wide. One of these units is to be replaced by a selective ripsaw.

A roll conveyor leads to a tilt lift which unloads onto a transfer conveyor sorting table 72' long x 14' wide. Defects are cut out on a battery of six Industrial Woodworking Machinery Company cut-off saws. Shorts are size-graded and dropped onto a belt conveyor for re-stacking manually on hand trucks. Scrap is dropped into a convenient conveyor line leading to a Jeffrey hammer hog. Waste then is carried by roof-mounted cyclones to the fuel pile (the plant produces all its own power).

Fork lifts unload stock on roller conveyors at the head of the 24' and 16' finger-jointing lines. Stock is transferred to breakdown hoists. One unloader is a Lawrence; the other is a Tri-State.

The two gluing lines are equipped by Industrial Woodworking Machinery Company. Stock is automatically shifted from the left-hand shaper to the right, which feeds pieces past the urea-melamine waterproof glue applicator wheel.

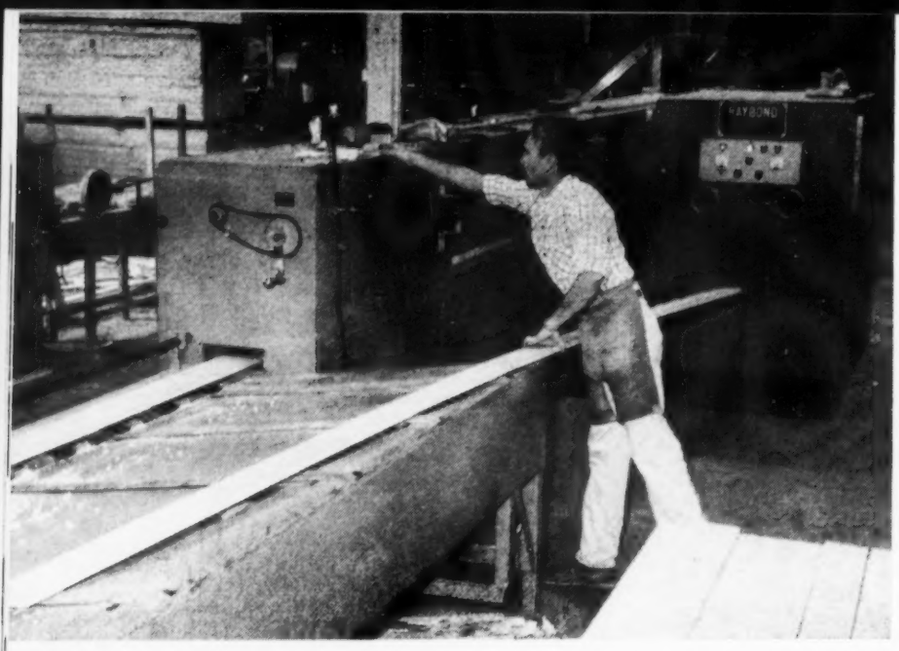
The rate of flow of stock through the shapers depends on the nature of the run, but averages about 100 f.p.m. The balance of the finger-jointing and end-gluing operations are naturally geared to this pace.

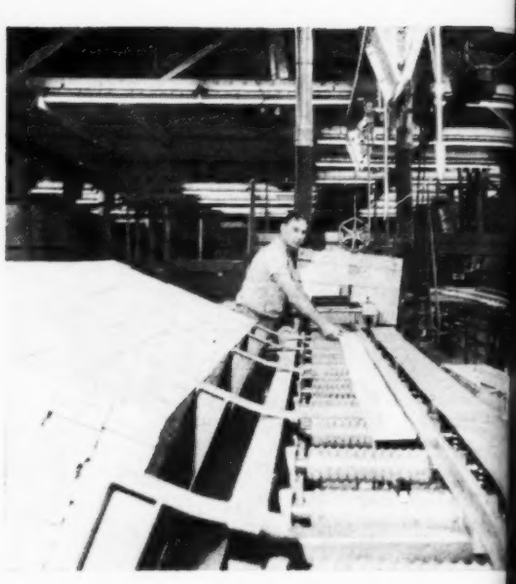
Stock is shaped to provide three to five fingers on 3/16" centers. Pieces 1'-8' long can be accommodated, and thickness from 4/4 to 8/4. An automatic glue applicator behind the second finger-joint shaper is pneumatically-fed. Stock thickness governs glue application rate.

Lengths up to 24' on one line and 16' on the other are transferred by crossover conveyor onto crowding rolls. The stock moves against an adjustable fence toward the curing line.

At predetermined lengths, a chop saw automatically makes a cut when the board in the saw is moved ahead by the material behind it in the crowding rolls. The saw is actuated when the end of the board hits a limit switch. After the board has been cut end pressure is pneumatically applied at 3,000 p.s.i.

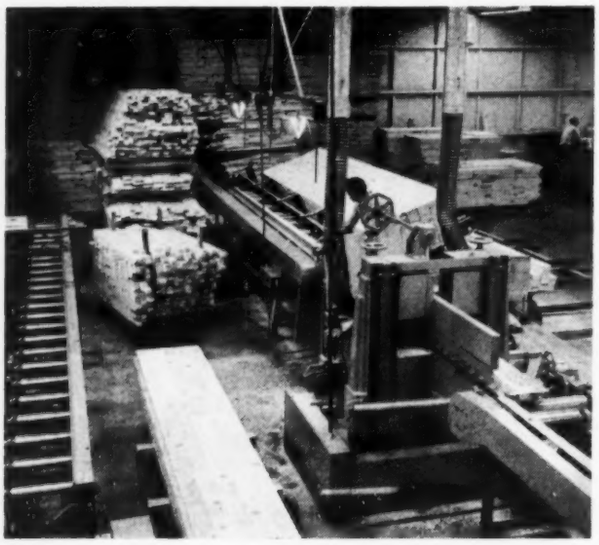
Moving ahead by belt, the stock enters a Raybond electronic glue drier, one on each line, each with a rating of 37 kilowatts. A pre-wiper spreads out the squeeze-out glue at each joint; otherwise the material would emerge from the drier with burn marks wherever there is a concentration of glue. Following inspection, an offbearer palletizes the material from unloading tables.

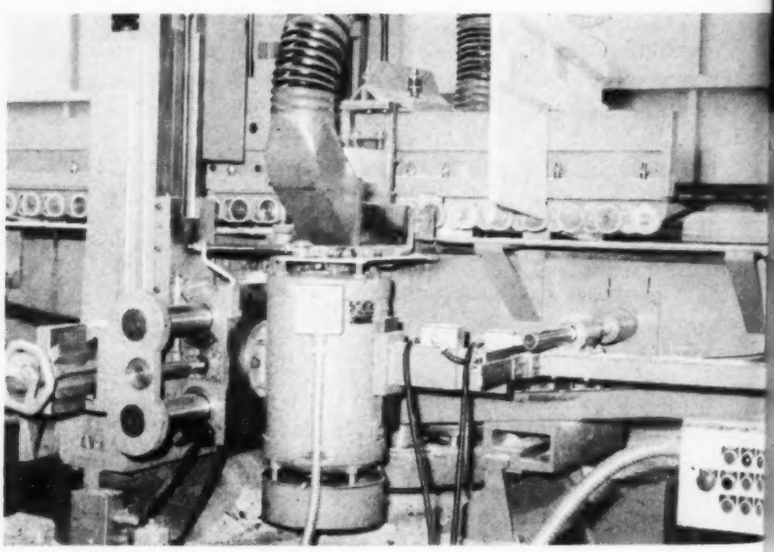


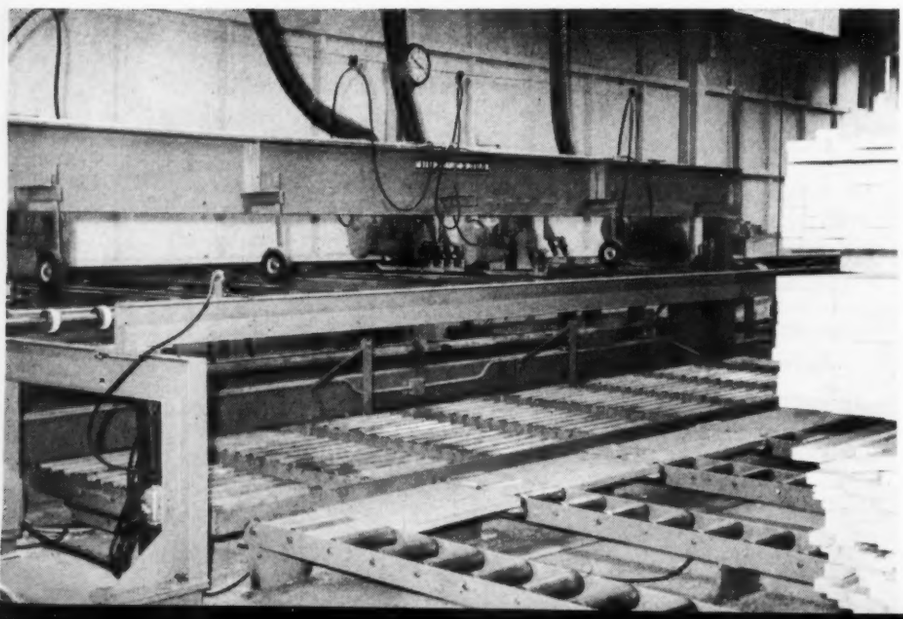


After stock comes chop saw, it passes to the Raybond electronic glue drier. Here end-glued strips or boards are manually stacked by offbearer as they leave drier.

Ready for assembly into panels (right) stock moves down roller conveyor toward edge-jointer.







General view (above left) of conveyor line leading to edge-jointer.

Closeup view (above) of edge-jointer, showing complex control panel.

Panels are end-trimmed to proper length, or cut into as many as three lengths, by this Mereen-Johnson multiple trim saw.

You can do more with

DELTA

New finishing machine

Doubles as a tool sharpener

4" Belt and 12" Disc Finishing Machine—available with wood or metal dust collector.

This new Delta Belt and Disc Finishing Machine will not only do 95% of all your custom or production finishing jobs, it can actually *save* you the cost of an extra tool! With an *exclusive* new Delta attachment, you can sharpen plane blades, wood or lathe chisels, many carving tools—quickly, precisely and without burning. No other comparable machine offers you this money-saving versatility!

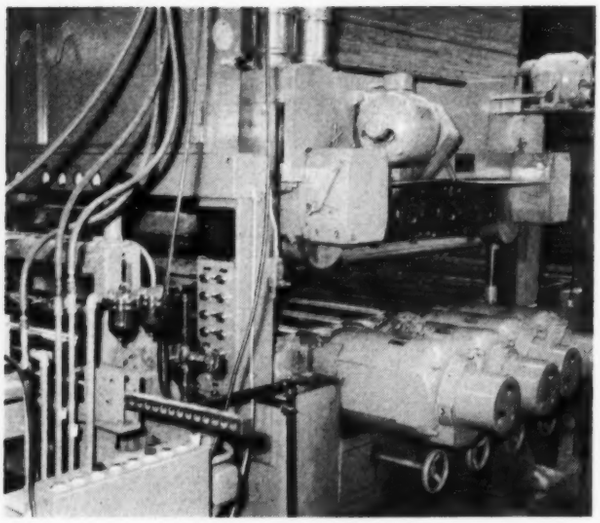
You can do more work faster because you have two machines, mounted on one stand, powered by a single motor. You will like the operating economy you get, but better still, you'll appreciate the many quality extras that Delta's 31 years of experience have built into this machine.

See your Delta Industrial Distributor (listed under "TOOLS" or "MACHINERY" in the Yellow Pages)—he'll give you details on this new machine and show you Delta's entire line of woodworking tools and accessories. For FREE literature, write: Rockwell Manufacturing Company, Delta Power Tool Division, 6611 N. Lexington Ave., Pittsburgh 8, Pa. In Canada: Rockwell Manufacturing Company of Canada, Ltd., Box 420, Guelph, Ontario.

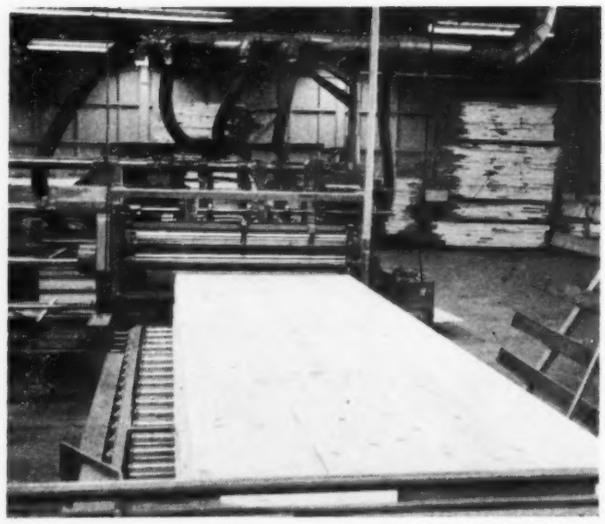
DELTA INDUSTRIAL TOOLS

another fine product by

ROCKWELL



An eight-drum Solem sander surfaces both sides of a panel simultaneously.



Panels emerge from a Greenlee tenoner. Hines also gives some panels a milled edge.

Only about one-third of Hines' single-width production continues on to the edge-bonding section. The rest is ready for shipment after going through the molders.

From the hydraulically-controlled Mereen-Johnson edge jointer, stock comes down a roller and a drum applies glue to one edge—for an 8' length. The first board in each panel is skipped. Limit switches determine the total length to be glued. In the layup section, one load is built up against a stop while another load is going into the press. Flow rate varies from 90 to 270 f.p.m., depending on thickness running. The minimum thickness handled for edge-bonding is 4/4 wood. A panel this thick passes through a 40 kilowatt Bell electronic edge gluer in a 30-second heat cycle.

The panel emerges from the Bell unit, is subjected to another inspection and strikes another limit switch which actuates a set of rolls. The rolls on the press outfeed conveyor pass panels along to another limit switch which starts the crossover conveyor feeding into a Mereen-Johnson 435-H panel trim saw. Here the panel is either end-trimmed to its full length, or trimmed into multiple lengths according to specifications. Passing through the saws, panels hit a limit switch at the scissor-lift table. The table automatically drops to receive the next panel.

Laid-up panels are stacked on an automatic Lawrence scissor-lift feeder leading to an eight-drum Solem sander. All material is started through the factory oversize to permit more thorough sanding. Lumber of 1" comes in at 27/32, 5/4 at 3/16 and 6/4 at a full 1½".

From the sander panels are cross-transferred to rolls leading to a Greenlee tenoner with carbide-tipped saws for ripping panels back smoothly to the required width. They are automatically stacked and moved to offbear rolls. For handling rejects, a Bennett panel saw arrangement with Black & Decker saw rips and trims.

The double-end Greenlee machine, besides sizing panels for width, can also apply milled edges such as tongue and groove or lapped edges. □

Coming Next Month . . .

A plant tour and feature interview on Bowater's new board plant, the first major hardboard mill in Eastern U.S.A., located at Catawba, South Carolina.

The new installation is designed to produce 160,000,000 square feet of board per year in a newly developed air process.

The opening of the new plant, with production scheduled for the furniture industry, marks first diversification in North America by the international Bowater Organization. Read full details in September.

A *Taylor* HOT GLUE APPLICATOR with a *Taylor* CLAMP CARRIER

saves . . . time . . . money . . . glue

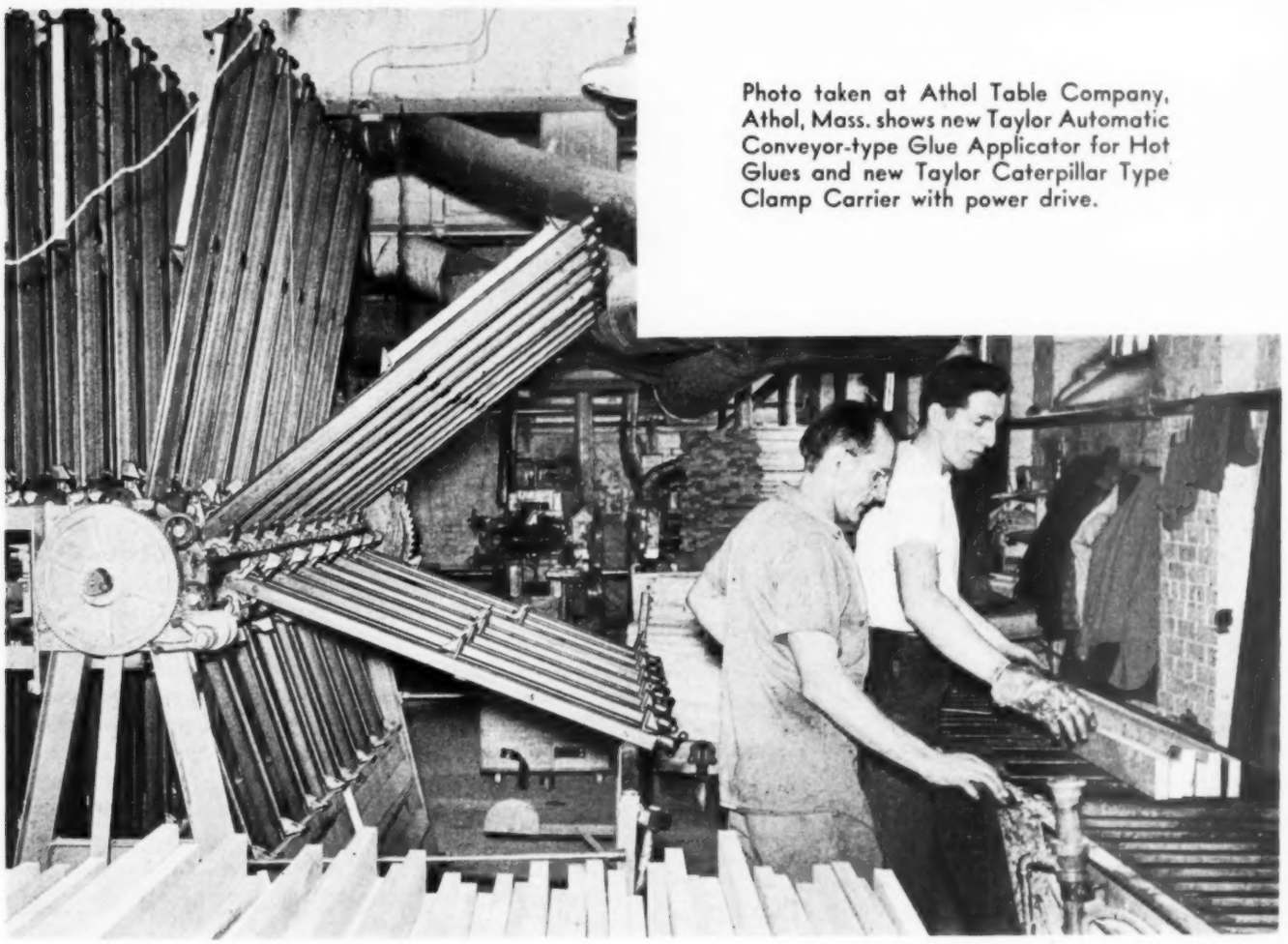


Photo taken at Athol Table Company, Athol, Mass. shows new Taylor Automatic Conveyor-type Glue Applicator for Hot Glues and new Taylor Caterpillar Type Clamp Carrier with power drive.

Mr. Robert Hadley of Athol Table Company reports: "We have made sizable savings with our new Taylor glue room equipment. The new Taylor Glue Applicator for hot glue has reduced the amount of glue we use per day, and since the Applicator applies glue to all pieces in a panel at one time, the possibility of chilled glue on the boards is nil. The reduction in labor and handling time has substantially increased the daily output of glued panels with no increase in man-power. Edge gluing culls are almost unknown."

If you are using a Clamp Carrier you too can reduce your costs by using a Taylor Conveyor-type Glue Applicator for hot or cold glues. For hot glues the glue heat is maintained at preset temperature, and applicator conveyor sections are heated to obtain best gluing conditions. For cold glues water is circulated through the double-jacketed glue pan. The versatile Taylor Clamp Carrier allows for quick and easy changes to suit changing panel sizes. Simple Taylor design assures low maintenance cost and no down time. Ask for booklet describing various uses of the Taylor Applicator with Clamp Carrier.

JAMES L. TAYLOR MANUFACTURING CO.

Edge Gluing Specialists Since 1900

120 PARKER AVENUE · POUGHKEEPSIE, N. Y.

THE DOUBLE END TENONER: MOST VERSATILE WOODWORKER

By Paul H. Graham
Contributing Editor

Part II

In the first installment of this series in last month's issue, Paul Graham introduced his survey of double end tenoners with a little historical background, general features of the machine, and some interesting case histories of installations he surveyed.

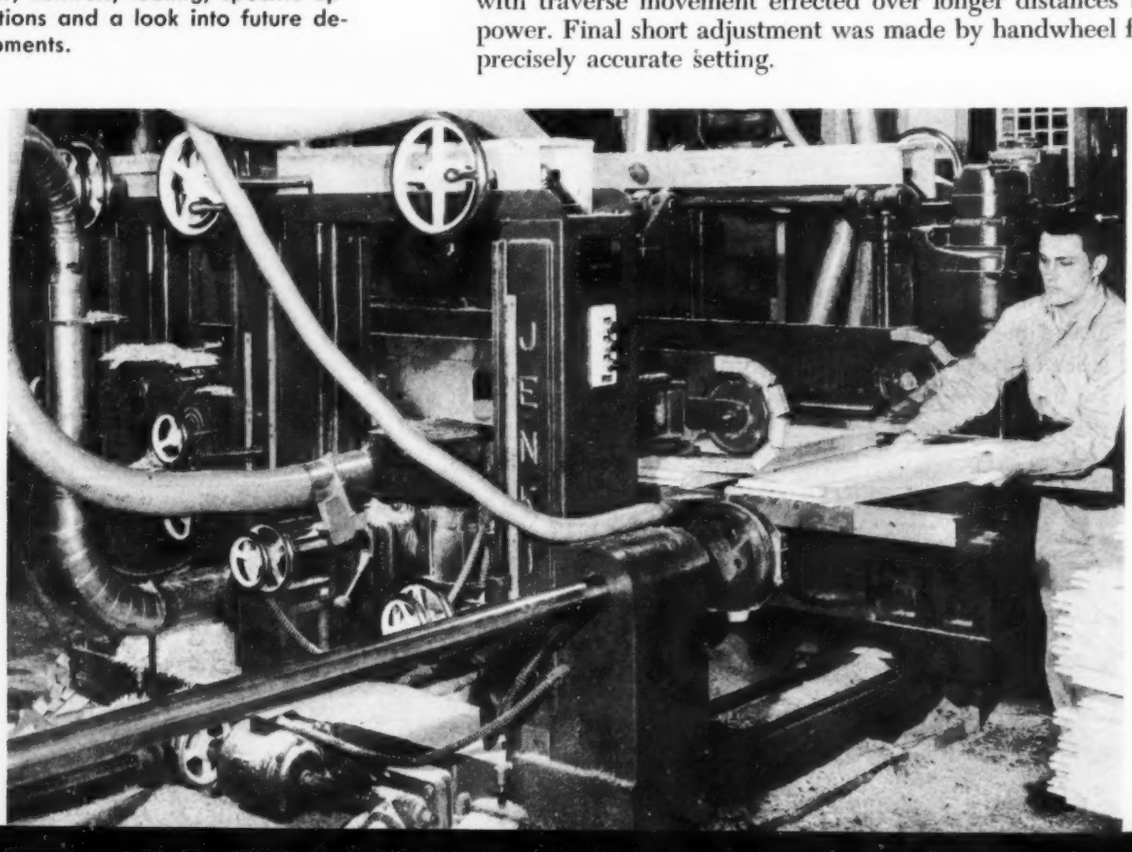
In this, Part Two, he carries us into more specific details about the structural design of double end tenoners and the mechanical details which are informative to anyone now operating a machine or anyone who is contemplating the purchase of a new machine.

Even if you are only interested through natural curiosity, you will find this installment informative with particular emphasis on capacities or limits, feed mechanisms, drives and adjustments.

Future installments will discuss power, controls, tooling, specific applications and a look into future developments.

Most double end tenoners observed in our survey incorporated a long, massive base structure to provide a substantial foundation for mounting feed mechanisms, cutting units and other operating parts. Another purpose was to damp or absorb operating vibrations. The base mounted box-type raised headstocks consisted of two vertical columns machined with ways for standard cutting units, carriage slides, cut-off attachments, pressure beam brackets and dado attachments. One column was fixed and the other was movable.

A typical dual rail base consisted of a heavy one-piece casting, made up of a combination of I-beam and channel beam longitudinal sections tied together by channel-section cross girts, and a box-type raised structure at one end on which the stationary column chain beam and feed mechanism were mounted. The stationary column was mounted directly to the machine base but the movable column, complete with chain rail and heads, was movable on the bed. It was traversed by power either way to vary the distance between cutterheads. This movement was made on a saddle over machined ways on top of the bed, with traverse movement effected over longer distances by power. Final short adjustment was made by handwheel for precisely accurate setting.



While traverse speeds varied with different machines, they were commonly in a range of about 60 inches per minute over the first long movement and then slowed down to about 15 inches per minute for close setting. Traverse movement usually had the traverse column controlled by electric motor through a gear box to a screw to move the headstock. Traverse movement in one machine was controlled by a built-in motor driving through worm and worm-wheel onto a fixed bed screw. Another used a power-driven screw and reversible friction device to control the traverse column.

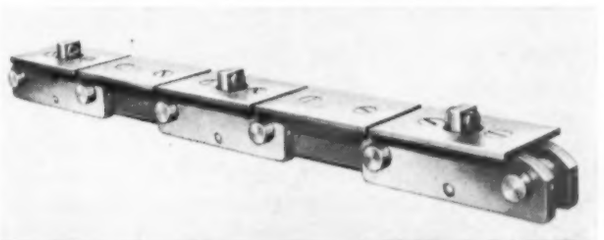
The power adjustment of one tenoner was driven by a geared-head motor controlled by a reversing switch. Another machine used a double multiple disc clutch set between a reversing mechanism. Limit switches were used to prevent jamming the movable headstock against the stationary unit and to avoid accidental run-off of the movable column from the traverse screw.

Good work at the double end tenoner is primarily dependent upon accurate setting. Once the sliding base of the machine has been set properly, all work passing through is held uniform for machining. Various measuring devices were employed, but adjustment measurement usually was indicated directly by a pointer moving across a graduated measuring strip and by means of visual dial gages. Some tenoners carried two dials for precise setting, one registering feet and inches, the other fractions of an inch. At some machines, adjustment was measured by a self-winding tape, sometimes enclosed in an illuminated housing fitted with magnifying lens for easy reading. All measuring devices were mounted convenient for the operator.

The electrically-controlled automatic traverse adjustment, with dial control, was used most frequently. The desired distance between the heads was first selected and preset on the dial. A push button then actuated the traverse mechanism and moved the headstock to the approximate pre-set position. Final precise adjustment was made by handwheel. Controls were mounted on the stationary column to permit the operator to control settings from his operating station.

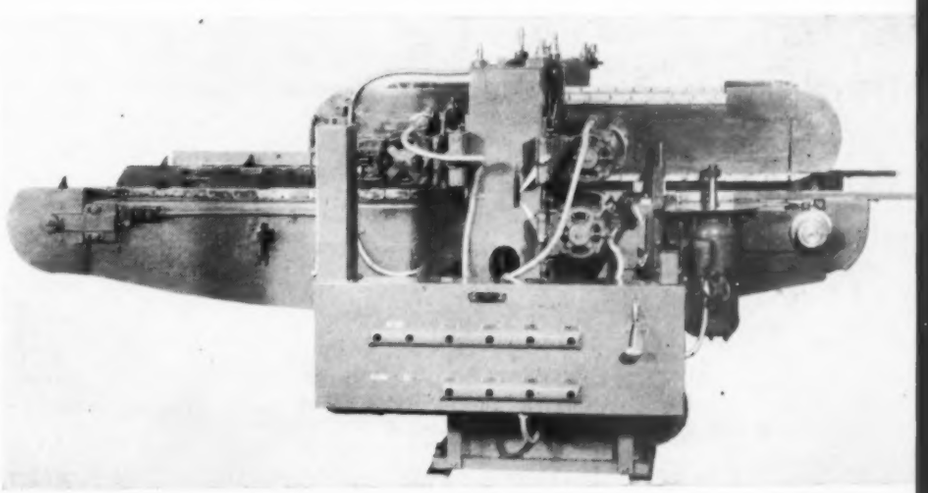
The minimum distance between shoulders for which the tenoners could be adjusted was 4 or 5 inches. Maximum distance varied with individual machine size but seldom exceeded 20 feet, even on custom-built tenoners designed for extra large and heavy work. In our survey, the width range of chain beams ahead of cutoff saws was about 27 to 92″ but greater widths were reported to have been used. Tenons as long as 6″ were cut at some machines in a single pass but most tenons were much shorter.

All feed chains ran in heavy, rigid chain beams, usually mounted on the column bases, with or without separate brackets. These beams carried machined ways or separate tracks, commonly "U" or "V" in shape. The tracks fitted the bottom groove of endless feed chain links in sliding engagement. Some chain beams were heavily-ribbed I-section castings. Others were made of double-wall fabricated steel processed for added stiffness and annealed for more permanent straightness.



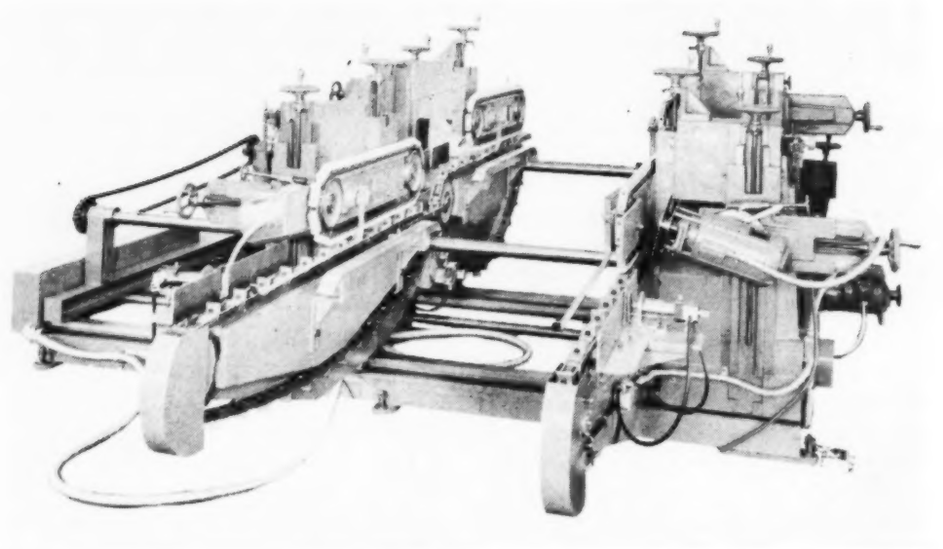
Feed chain with retractable dogs and large-faced adjustable stop screws.

Projections at the sides were secured to the columns to tie the entire unit together. The sides of the chain beams were protected by removable metal guides to prevent dust and dirt from accumulating on the slack side of the chains. Some tenoners



Jenkins double end tenoner designed and equipped for sash plant has 8 tenon arbors, 4 cope spindles and 2 trim saws for greater operational versatility. Extra tenon arbors eliminate extra setup on check rail tenoning, cope spindles and the need for complex head setup. (View from outfeed end.)

Challoner double end tenoner designed for use in medium-sized plants incorporates all major features of larger machines, including jump attachments and control devices.



Infeed view of special Mereen-Johnson two-stage tenoner used for beveling and mitering brick moulding right and left hand simultaneously.

had their chain beams fitted with felt wipers to clean the chain links just before they engaged the infeed sprocket.

Some tenoners carried an adjustment fence on one beam to aid in locating the stock across the chains. This was carried into the slides simultaneously adjusted by handwheel and screw movement. The ways or tracks generally were renewable being made of long-wearing alloy metals to reduce friction and insure longer life.

Sprocket-driven endless feed chains carried the stock with parallel dogs or work-holding lugs, positioned to suit the work to be done. The stock was held down firmly on the chains, against the dogs, by various holddown or pressure devices. Most of these feed chains and sprockets were enclosed, except for the rear end of the chain used to convey the stock. The rear end of the frame carrying the feed chains generally was extended enough to carry the finished work from the machine to a point within easy reach of the offbearer, or to an automatic return feed mechanism which carried it back to the operator. It was common practice to guard the rear end of the frames with a metal guard extending beyond the periphery of the sprockets and ends of the side lugs.

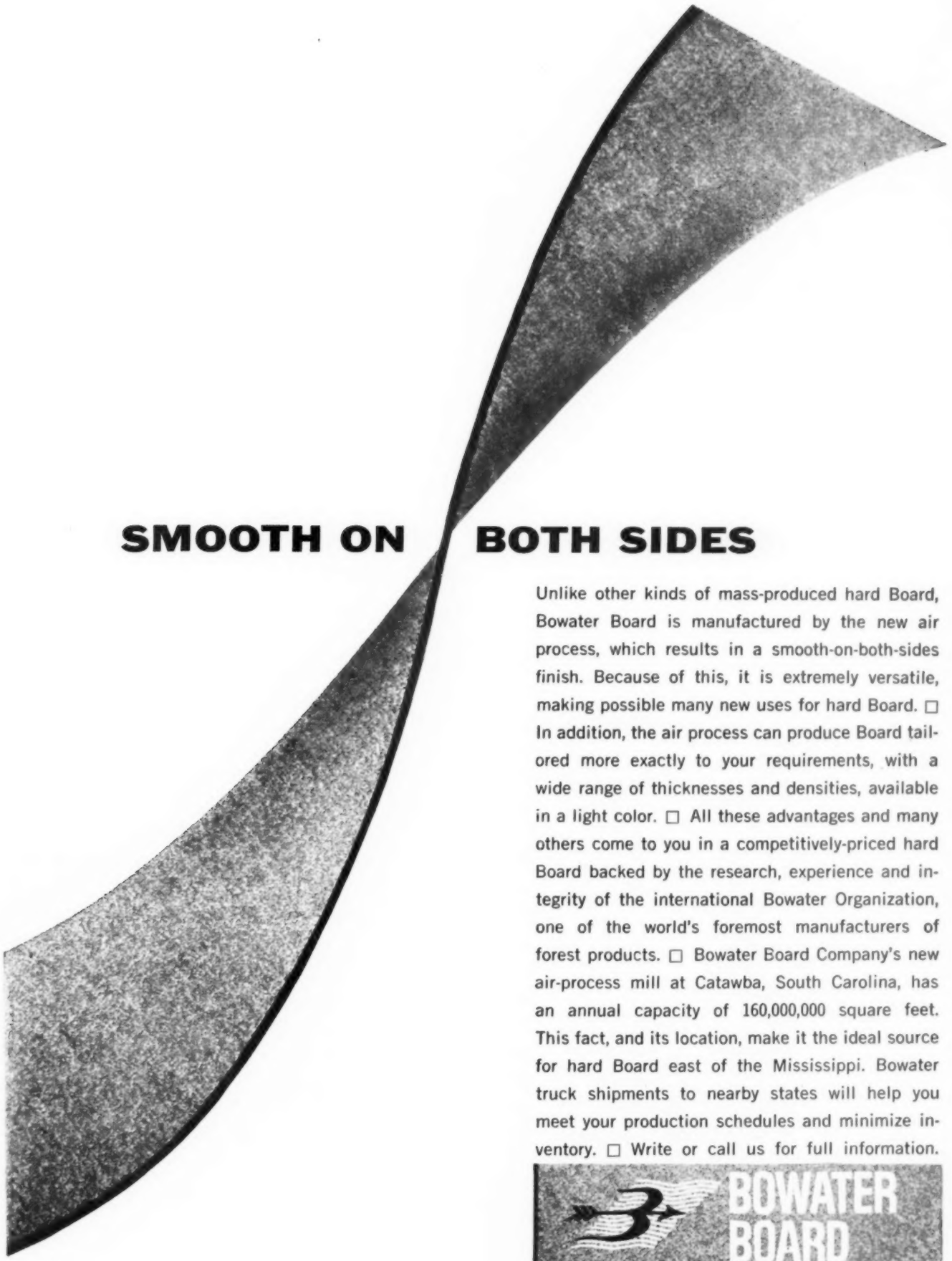
Plain or smooth-topped chains were used with standard work-handling dogs and where stock-marking was an important consideration. Some chains incorporated rubber inserts to handle finished or delicate faces. Corrugated or rough surfaced chains were used when stronger gripping action was required, as for special sizing, shaping and similar operations.

Every tenoner made some provision for quickly and accurately adjusting one chain with the other to parallel the work-holding dogs, or to stagger them for running stock at an angle. Usually some form of worm and gear mechanism rotated the feed sprocket. Accurate chain setting was quickly made by reference to graduations on the feed sprocket housing and/or a micrometer dial on the adjusting worm shaft.

A tenoner using both of these indicating devices showed settings to ½″ on the housing measurement strip and intermediate settings to 1/64″ on the dial. (The adjusting unit consisted of a worm and worm-gear mechanism, which rotated the feed sprocket of a single chain on one of the chain beams at the rear.) After the desired setting had been made, the sprocket was rigidly locked in position.

Various tracks and chains were designed to compensate for wear. The tracks were machined to close tolerances, some only .003″ wider than the chain for close running clearance. A press fit in the side plates made the chain straight and held the width accurately. Feed chains were made of special alloy metal, with points of contact hardened and machined for a close tolerance fit with tracks or ways. Open-block type chains were made with hardened steel center links and oil-impregnated bronze bushings. Some chain blocks were machined with a V-shape on the bottom to fit over the inverted V-section of the chain beams. One machine carried blocks machined with three 45° angle grooves to prevent any sidewise movement and eliminate the need for side guides.

A special piston-type chain was made with solid center and driving links, both riding in a "U"-



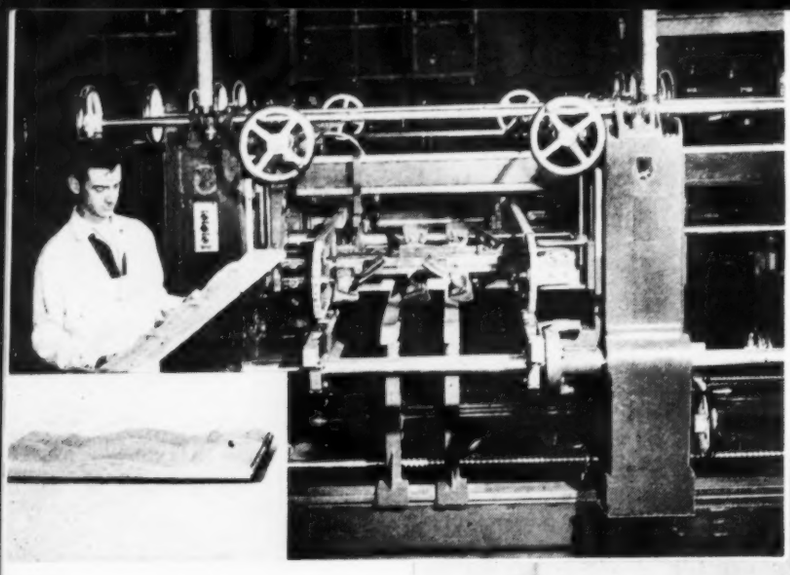
SMOOTH ON BOTH SIDES

Unlike other kinds of mass-produced hard Board, Bowater Board is manufactured by the new air process, which results in a smooth-on-both-sides finish. Because of this, it is extremely versatile, making possible many new uses for hard Board. □ In addition, the air process can produce Board tailored more exactly to your requirements, with a wide range of thicknesses and densities, available in a light color. □ All these advantages and many others come to you in a competitively-priced hard Board backed by the research, experience and integrity of the international Bowater Organization, one of the world's foremost manufacturers of forest products. □ Bowater Board Company's new air-process mill at Catawba, South Carolina, has an annual capacity of 160,000,000 square feet. This fact, and its location, make it the ideal source for hard Board east of the Mississippi. Bowater truck shipments to nearby states will help you meet your production schedules and minimize inventory. □ Write or call us for full information.

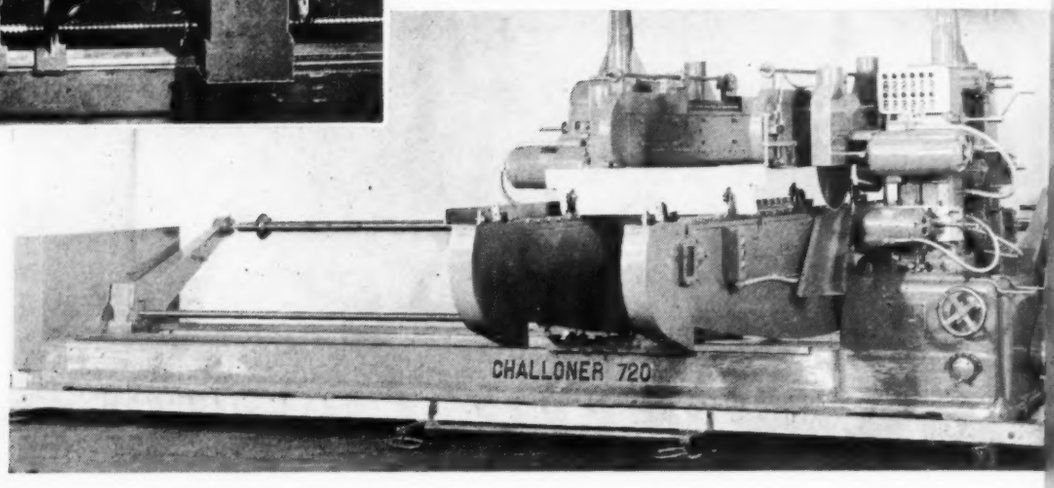
BOWATER BOARD

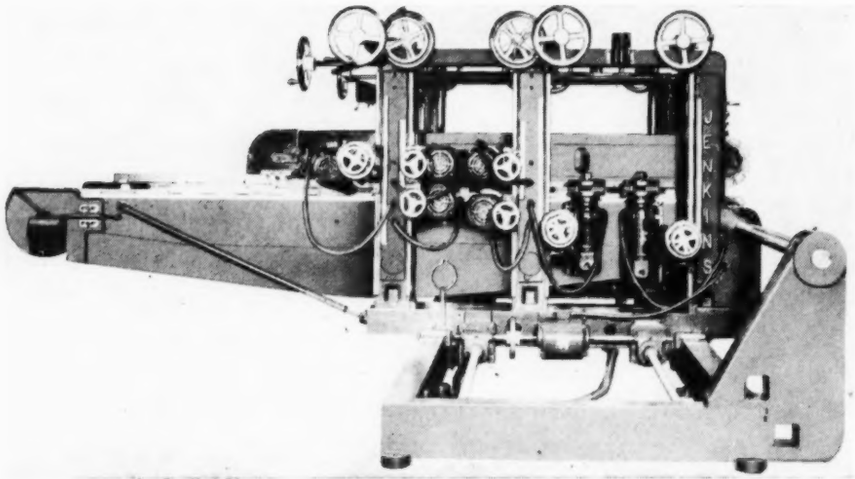
BOWATER BOARD COMPANY • CATAWBA, S. C.
PHONE: ROCK HILL, S. C. 328-0131
A MEMBER OF THE BOWATER ORGANIZATION

For information about any advertised product, see the Advertisers Index and Action Card inside back cover



Jenkins double end tenoner setup to produce French Provincial drawer front in operator's hands. The drawer stock was trimmed to finished size, its entire surface contour shaped, and ends gained and beaded, all in a single continuous pass through the machine.





Front view of Challoner double end tenoner designed and equipped for machining frames and sills, handles stock 5¾"-144" between tenon shoulders, 50" wide, and up to 6" thick. Special equipment includes casing miter attachment with hopper feed, notcher unit with hopper feed, and angular dado arrangement.

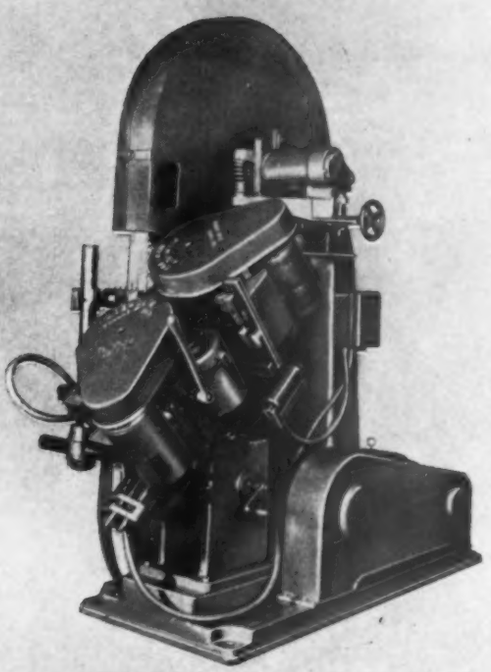
Jenkins double end tenoner has three cutting tool stands and five cutting tool stations on both traverse and stationary side of machine and provides 31" vertical adjustment for cutters and 180° tilt for trim saws and copes.

shaped track so that holddown pressure on the links or straps was transmitted directly to the track rather than through the chain pins. Operating like a piston, with bearings and tracks fully enclosed, the round bearing groove was sealed against loss of oil or infiltration of any dirt and dust that might otherwise seize the moving chain members or clog the sprockets. Adjustable level guides were employed to keep the chain square on the track without tilting or tipping. Link and chain pins were mounted in oil-less lubricant-impregnated bushings.

Many sprockets were equipped with wipers to keep them free of dirt and dust. Automatic lubrication of chains and tracks was accomplished with automatic pressure oiling systems serviced by some form of measuring pump. In a typical application, force-feed oilers pumped oil for chains and tracks to a point at the top of the tracks, just in front of the pressure beams. Each pump unit was mounted on the side of its chain beam and operated only with the feed. Flow of oil was carefully metered by a regulator.

Conventional oil lubrication of chains and tracks was not too well suited for tenoners used in the abrasive, dusty atmosphere of insulation board plants. A manufacturer specializing in tenoners for this industry developed a special lubricating treatment which has proven to be better suited for machines handling insulation board at speeds up to 300 f.p.m. A dry-film lubricant is sprayed and baked onto operating parts. The development eliminates the track pressure oiler on the chain beam and previous oil-marking troubles. The same treatment is now being used on tenoners for wood-

SMALL INVESTMENTS ...BIG RETURNS



Tri-State Model T36-4 36" Tilting Roll Band Resaw. Feed rolls tilt to 45 degrees. Machine is all cast construction and is ball and roller bearing throughout. Feed speeds variable from 10 to 250 FPM. Controlled by single rheostat. Main drive motor is 20 HP. Heavier horsepower available. No blade or starter for main motor furnished.

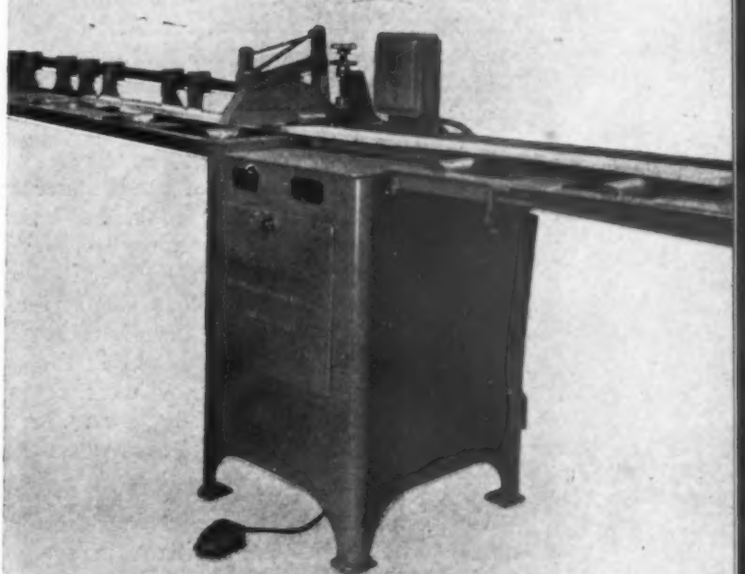
PRICE: F.O.B. DALLAS, TEX.....$5,400.00

OPTIONAL EXTRA EQUIPMENT:

Dust Pan (recommended) .....$ 70.00
25 HP motor in place of standard 20 HP.....$ 100.00
30 HP motor in place of 20 HP.....$ 200.00

Industrial #500 (right or left hand) Air Operated Cut Off Saw; equipped with 5 HP motor and manual starter; ball bearing precision arbor; including oiler and air regulator, less saw blade. Ready to connect to air and electrical supply.

PRICE: F.O.B. GARLAND, TEX. $995.00



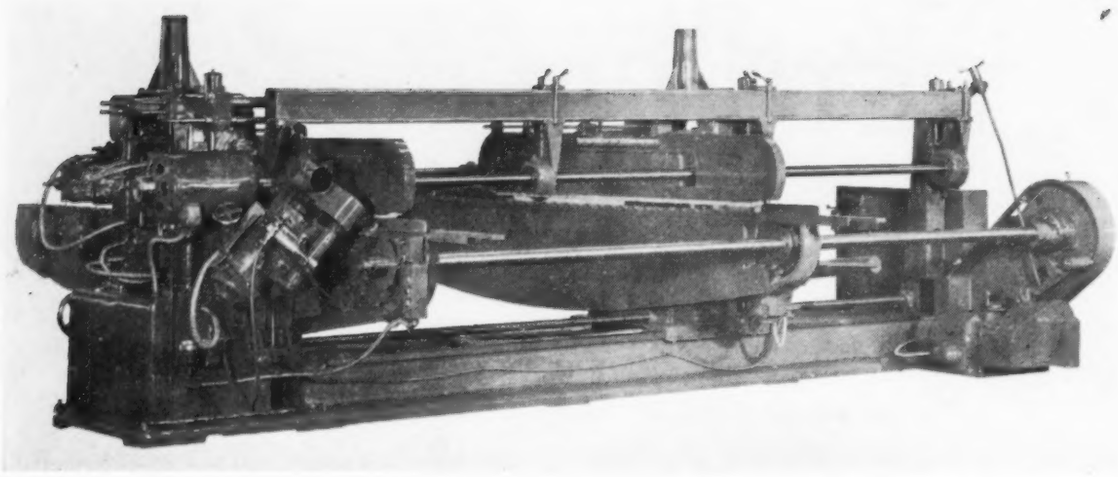
RECOMMENDED ACCESSORY EQUIPMENT:

14" diameter cut off saw blade.....$ 19.50
8' long infeed roller table .....$ 90.00
8' long outfeed roller table.....$ 90.00
8' long 1" square gauge bar, graduated.....$ 28.00
3 – Mounting standards for above bar.....$ 4.25 ea.
6 – Ind. precision lumber stops.....$ 6.00 ea.

If you have need of one or both of the above machines they'll bring you big returns on your investment. Write, Wire or Phone for further details.

FINGER JOINT SHAPERS
PANEL SAWS • CUT OFF SAWS
JOINTER STANDS
GLUE PUMPS • CONVEYORS
CUSTOM MACHINERY
FINGER JOINT ASSEMBLY MACHINES

TRI-STATE
MACHINERY COMPANY
3000 COMMERCE STREET DALLAS TEXAS



Rear view of Challoner tenoner showing tilting heads, extended rear stock guides, feed chains and pressure beams.

working plants where oil-marking has been a problem.

Most feed chains were arranged to carry dogs up to 2¾" deep. Fixed and retractable or disappearing dogs were used on the chains, alternately spaced, for many jobs. A tenoner of foreign make carried retractable dogs with large-faced adjustable stop screws designed to give sensitive alignment. Flat back dogs were used for backing, and deep finger dogs for feeding stock. Special dogs included dogs with rubber-faced links, spring-loaded drop dogs, core dogs, high-fixed dogs and wood-faced dogs.

One tenoner employed patented interchangeable snap-on feed dogs which could be quickly inserted or removed. Dogs were easily spaced to accommodate various widths of stock. All dogs were removed in about two minutes to trim wide panels. The dogs were removed from their locking springs by inserting a screwdriver blade in the slot and exerting a slight twist. They were replaced or firmly repositioned by placing a dog in the slot and striking the top sharply to engage the locking spring.

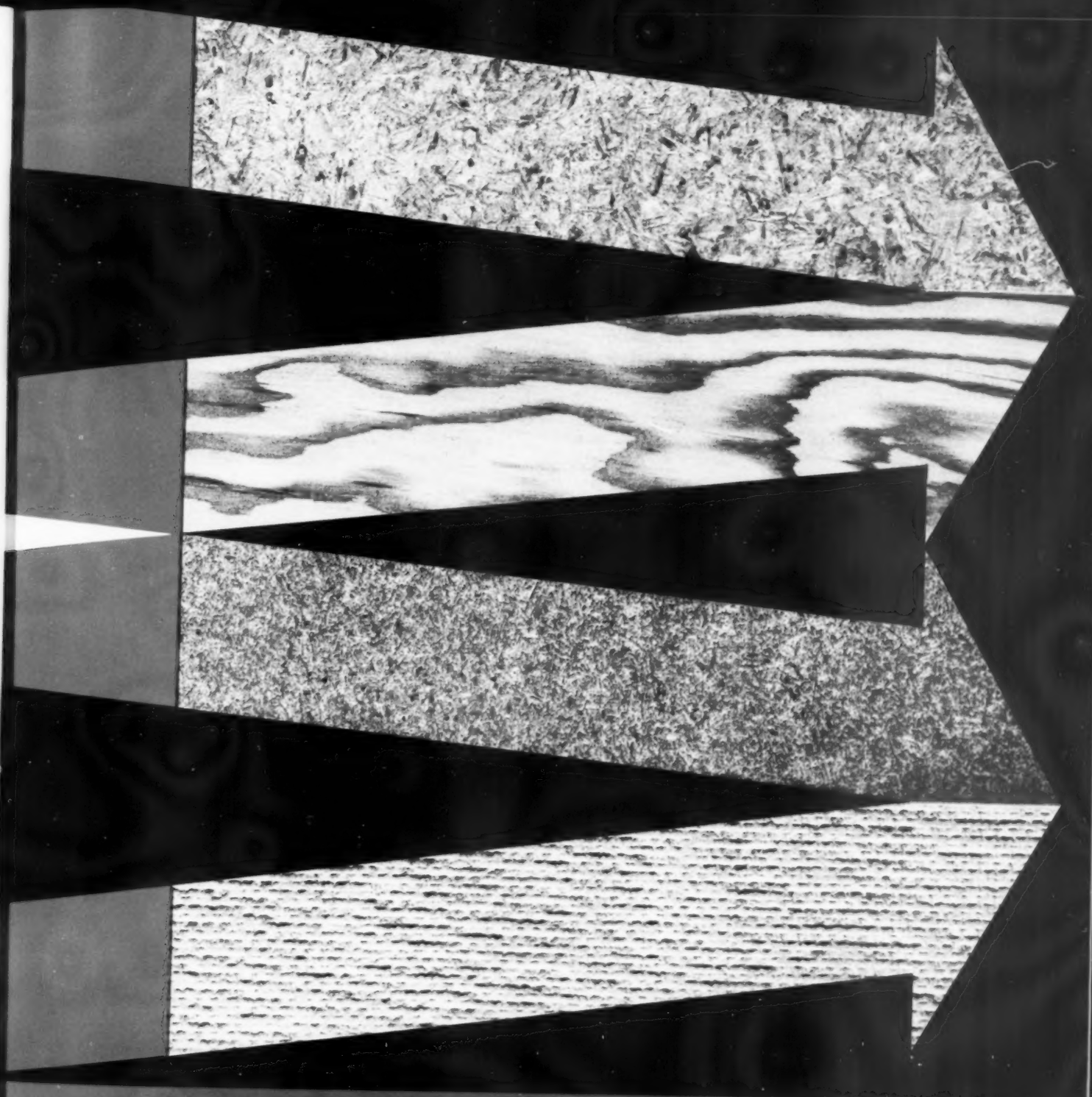
Hold-back chain attachments were used to hold narrow stock in vertical position firmly against the feed dogs until properly secured by the holddown pressure beams. They were especially effective where several narrow pieces were fed together through the machine. The attachments used spring-loaded chains fastened inside the chain beams to carry the work-holding dogs. In a typical installation three dogs were mounted in a 24" spacing for a standard feed chain with a 32" feed dog spacing.

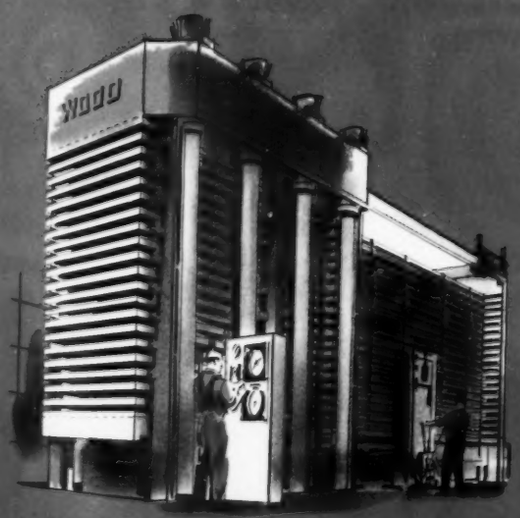
Feed chains were operated by variable feed drive at speeds of 10-64 f.p.m. on standard machines. The speeds were provided in various machines in four to twelve rates of feed, or were infinitely variable. Most chains were driven through a variable speed transmission so that any desired speed from maximum to minimum was quickly obtained.

A high-speed production tenoner had variable feed through a V-belt drive and spur gears driven by a four-speed motor equipped with a magnetic brake. The clutch was eliminated from many tenoners by the addition of a magnetic brake on the feed motor. Stop, start and jog switches served to reduce wear and simplify the operation. Another tenoner had its feed chains driven by sprockets keyed to a large diameter shaft extending the full width of the machine. The shaft was driven through a worm and worm-reduction gear by a variable speed motor. Possible damage from work jamming in the machine was prevented by an adjustable friction plate slip clutch.

Another machine had stepless variable feed rates from a feed driving mechanism consisting of a single speed motor driving through variable speed V-pulleys and V-belts. A flat belt connected to the main feed shaft. The belt was controlled by levers at both the operator's and offbearer's stations. The countershaft was part of the traverse mechanism. A reduction gear ratio of 22½ to 1 produced a powerful drive.

A foreign tenoner featured a stepless feed variable between 16mm. and 52 f.p.m., incorporating a variable slowdown of the feed as the stock passed through critical stages of machining. This drive consisted of a separate feed motor and a patented oil-hydraulic feed gear which automatically alternated between the pre-selected feed speed and pre-determined variable showdown speed for ma-





R. D. WOOD COMPANY

How to grow in the booming industry of composition board production!

Whether expanding present facilities . . .
or installing a new production system . . .

let R. D. Wood Company put their complete knowledge of the wood processing industry to work in the design and production of *your* hydraulic press installation. Wood Presses are built to perform for years. Many expandable design features help you grow in proportion to ever-increasing demands. Here's how . . .

Gear your production for growth, keep abreast

R. D. Wood Presses – engineered

will meet your needs for years

Grow with the press manufacturer who knows your needs and how to meet them. R. D. Wood Company! When you buy a Wood Press you're buying sound, dependable performance for many years to come. You're set to meet any market demand—profitably.

Specific Experience R. D. Wood Company knows the wood composition board industry—and they know the press business. This combination gives you the advantage of gaining pertinent knowledge and experience which can be applied to your specific problems.

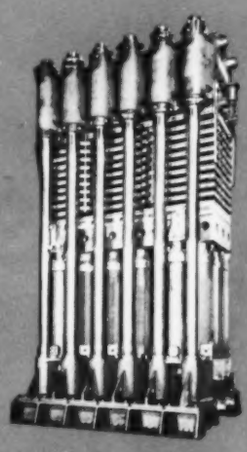
Finest Quality Only the highest manufacturing standards and top quality materials are used in Wood Presses to guarantee you smooth, dependable performance; fast, economical production; trouble-free operation—features you naturally expect with a Wood Press.

Sound, Imaginative Engineering When your complete hydraulic press installation is designed, it's engineered to meet your present requirements *and*, if you desire, to anticipate future expansion. With sound planning, you can increase production without excessive time loss during conversion and without a major equipment investment. In some cases, you can actually *double* production with one machine.

Engineering Service You get the benefits of experienced engineers who can advise you in preliminary planning, then save you money in the press design by utilizing basic R. D. Wood plans and applying your specifications and modifications. You suit your needs, yet save valuable engineering dollars!

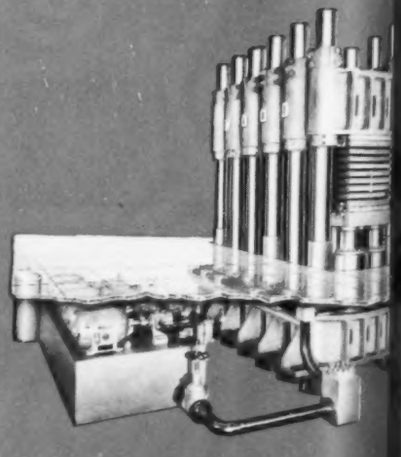
A Complete Line from which to Choose You can get any size or capacity you need for your press operation, plus necessary valves, platens, accumulators, accessories. Shown here are a few of the basic presses available . . . one, or more, can meet your needs—exactly!

Choose your press from this complete line of composition board presses. For other special processes such as Chipboard, Flakeboard and Particle Board, there's a Wood Press to fit your exact requirements. All presses can be furnished complete with pressure and exhaust steam manifold and steam piping, self-contained, motor-driven pumping systems or valving and piping to operate from your accumulator systems. In addition, each press is designed to fit automatic loading and discharge units.



For Dry Process Hardboard

Machine Number 8197, accumulator operated hydraulic press. Capacity, 7,500-tons; platen size, 54" x 150"; number press openings, 10; height of press, 24'11"; floor space, 10'9" x 14'4". (Can be furnished with self-contained pumping unit if required.)

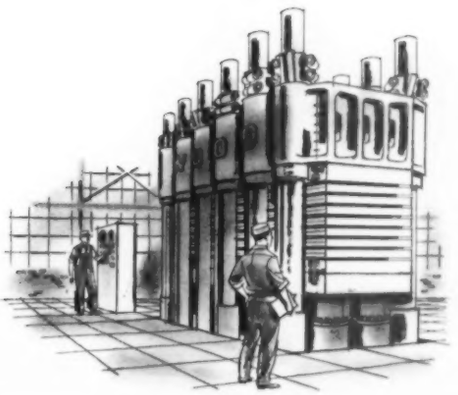


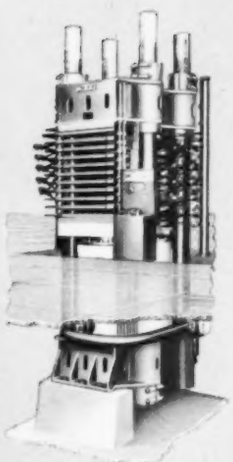
For Dry Process Hardboard

Machine Number 9423, self-contained hydraulic press. Capacity, 8,300-tons; platen size, 54" x 200"; number press openings, seven expandable to 15; height of press, 25'; floor space, 11'3" x 15'3" (press only).

of a thriving industry . . .

for top production



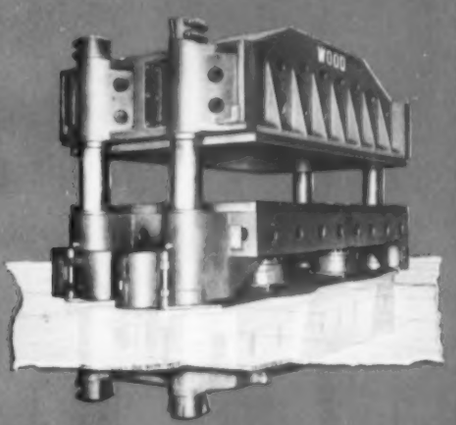


For Dry Process Hardboard

Machine Number 9282, self-contained hydraulic press. Capacity, 4,000-tons; platen size 56″ x 116″; number press openings, ten expandable to 16; height of press, 28′; floor space, 20′ x 20′.

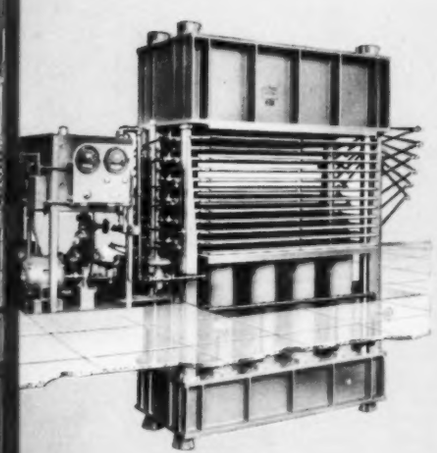
For Wet Process Hardboard

Machine Number 9313, self-contained hydraulic press. Capacity, 3,675-tons; platen size 54″ x 198″; number of press openings, ten expandable to 20; height of press, 33′; floor space, 11′6″ x 16′7″ (press only).



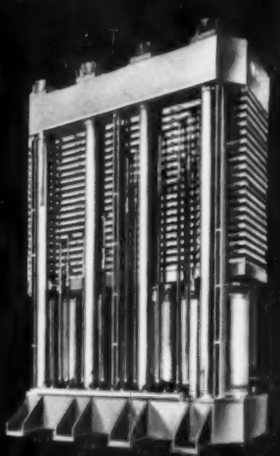
For Composition Board

Machine Number 9467, self-contained hydraulic press. Capacity, 1,200-tons; platen size, 13′10″ x 9′1″; height of opening, 3″—opens to 24″ for inspection and maintenance; stroke of rams, 24″; height of press, 14′; floor space, 18′2″ x 9′1″.



For Plywood

Machine Number 9292, self-contained hydraulic press. Capacity, 625-tons; for manufacturing sheets 50″ x 100″; stroke of rams, 39″; press openings, 12; height of press, 17′1″; floor space, 8′2″ x 20′8″ (press and pumping unit).

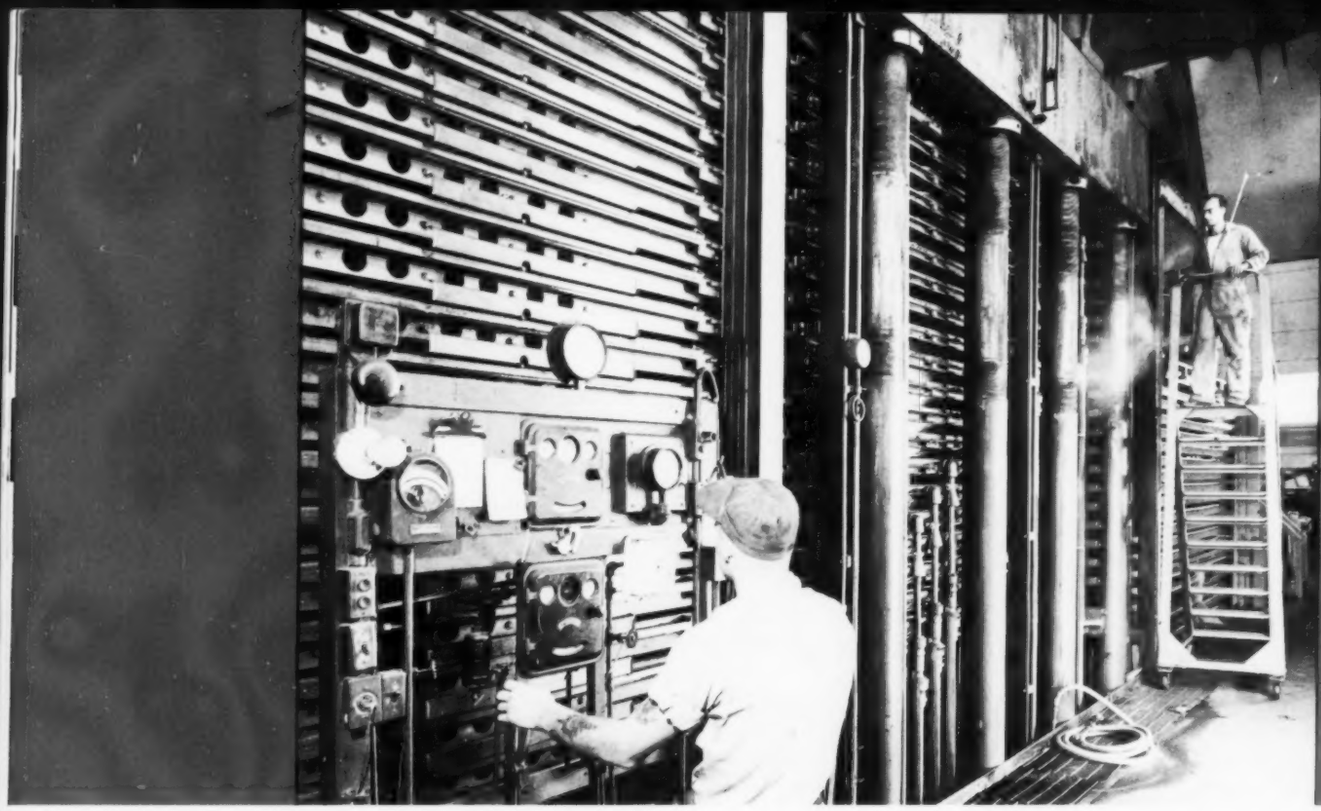


For Wet Process Hardboard

Machine Number 9471, self-contained hydraulic press. Capacity, 3,600-tons; platen size, 54″ x 198″; press openings, 20; height of press, 33′; floor space, 11′6″ x16′7″ (press only).

For Special Processes

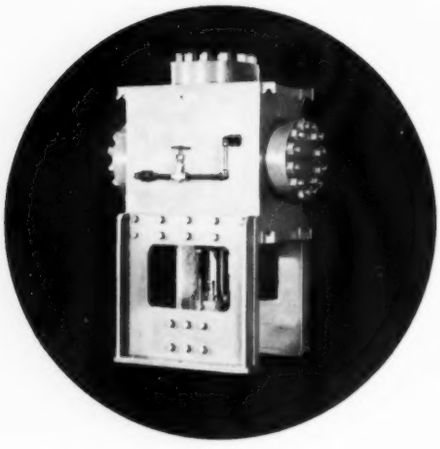
Machine Number 9402, combination press for cement-asbestos board and corrugated cement-asbestos board, self-contained, high-production hydraulic press. Manual, semi-automatic or fully automatic. Capacity, 6400-tons; platen size, 55″ x 151″; single opening; height, 3′10″; height of press, 23′; floor space, 12′ x 12′ (press only).



R. D. Wood precision-engineered steam heated platens...
give you superior finished products

Here's the perfect working surface for your board products. R. D. Wood Platens are precisely manufactured to give you the highest grade surface finish so that you can produce top quality products—consistently. They are made from solid steel slabs, machined to parallel tolerances of .003″ to .0015″ and drilled with extreme precision on accurately spaced centers to insure equal heat distribution throughout the platen.

There are three grades of finish available—*smooth tool finish*, provides a true surface suitable for most commercial applications; *emery-and-oil-finish*, used where processed material directly contacts platen, and exactly uniform product surface is not required; and *high polish emery-and-oil-finish*, completely free of tool marks, for direct contact processing with uniform surface appearance. Sizes range: 7′0″ x 34′0″ or 8′0″ x 26′0″, either steam or electric. *Perfect for your new press. Perfect for replacement on existing presses.*



R. D. WOOD CO.

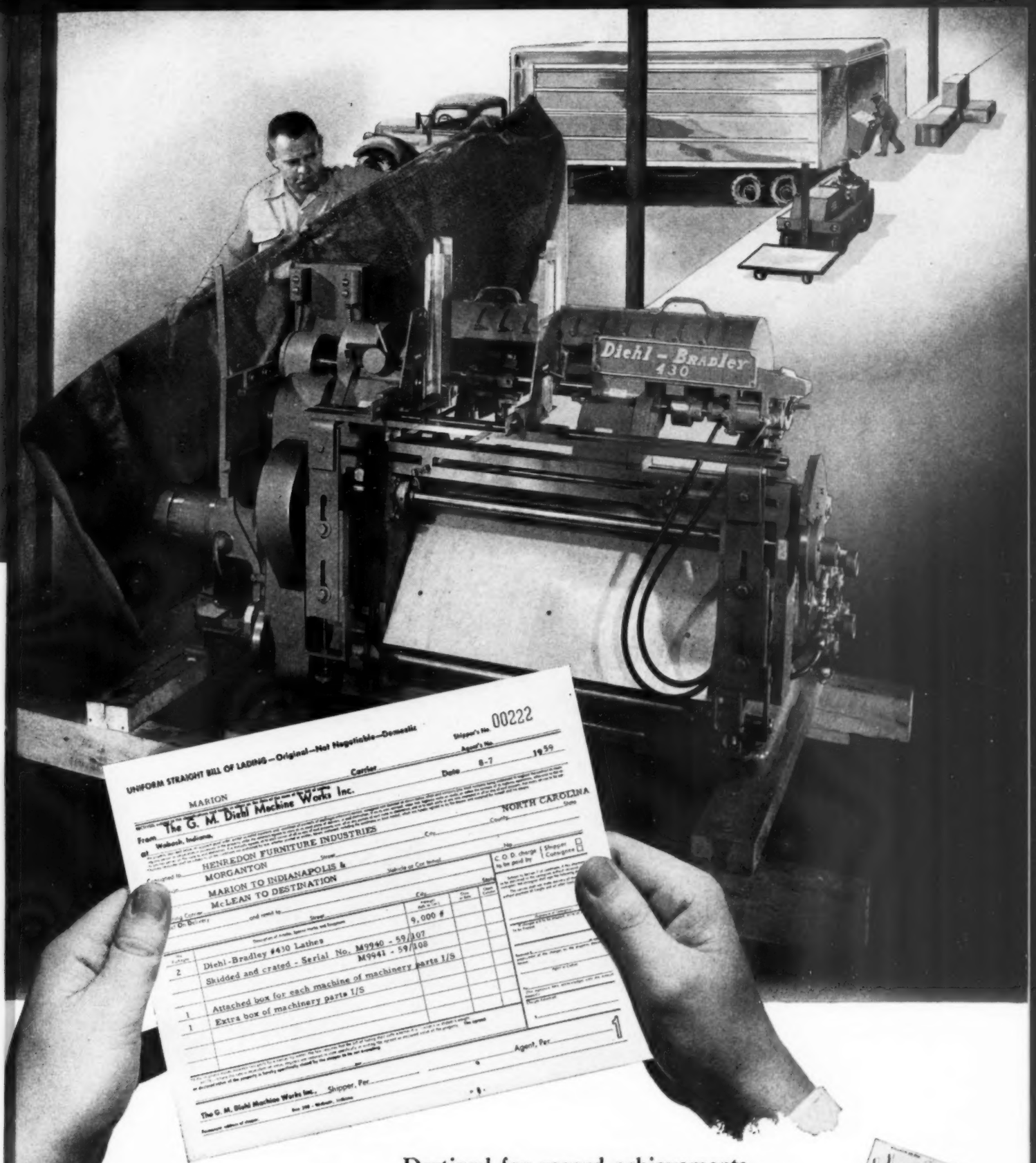
PUBLIC LEDGER BUILDING • PHILA. 5, PA.

Every valve you need for a complete hydraulic system.

When installing a new system or updating an existing installation, you can get any valve you need from one source . . . R. D. Wood. Choose from a complete line of stop valves, check valves, operating valves, safety relief valves, shock absorbers, accumulator control valves, a large variety of special valves. With each you receive the same reliable performance as with every Wood Press, because they're built to handle the toughest jobs—resist the roughest treatment.

First step to composition board production—contact R. D. Wood Company

Here's the logical way to start *your* plans for expansion. From R. D. Wood Company, you can get the benefits of the experience of many years, and many press installations, to be applied to your own situation. Write today for further information and be one step closer to a more profitable business.



UNIFORM STRAIGHT BILL OF LADING—Original—Not Negotiable—Domestic

Shipper's No. 00222

Agent's No.

Carrier

Date 8-7 1959

From MARION

The G. M. Diehl Machine Works Inc.

at Wabash, Indiana

NORTH CAROLINA

HENREDON FURNITURE INDUSTRIES

MORGANTON

MARION TO INDIANAPOLIS &
McLEAN TO DESTINATION

C. O. D. charge to be paid by | Shipper | Consignee

2	Diehl-Bradley #430 Lathes Skidded and crated - Serial No. M9940 - 59/307 M9941 - 59/308	9,000 #	
1	Attached box for each machine of machinery parts 1/S		
1	Extra box of machinery parts 1/S		

Agent, Per

The G. M. Diehl Machine Works Inc. Shipper, Per

Destined for record achievements . . .

It's a safe bet that production will hit new heights when these Diehl-Bradley Wood Turning Lathes reach their destination. From start to finish no other lathe can match the Diehl-Bradley for smooth, uniform, *controlled cutting*. An exclusive feature—cam and gear train feed—assures positive, trouble-free operation. If you'd like to see for yourself what the Diehl-Bradley #430 or #424 can do, your Diehl representative will arrange a demonstration in a nearby plant.

Send for Bulletin DB-359 today.

Standard of Comparison in the Woodworking Industry

G. M. DIEHL MACHINE WORKS, INC. • Wabash, Indiana • Phone 484

Diehl

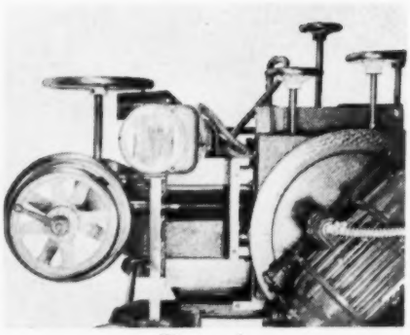


Figure 1

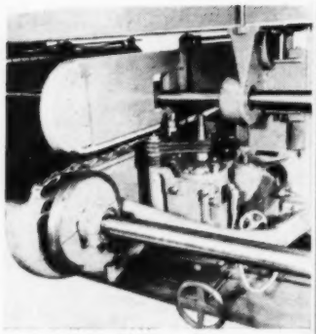


Figure 2

Jenkins Magnascope (Fig. 1) indicator gives column adjustment measurement with self-winding steel tape inclosed in illuminated housing fitted with magnifying lens.

Challoner hi-speed jump cope attachment (Fig. 2) used to trim or relish tenons to fit into blind dado is driven from cope spindle, with jump action controlled by cam on feed drive shaft. V-belt drive runs from cope spindle to pivot shaft to cutter spindle which turns at 7200 r.p.m.

Challoner automatic jump arbor attachment (Fig. 3) has jump controlled by cams mounted on feed drive shaft so arbor can be arranged to jump on 16" or 32" of feed chain travel.

Rear heads (Fig. 4) are swivel-mounted on yokes with two-directional slides and lower heads pull out to permit use of one spindle horizontal and one vertical or at an angle.

Figure 3

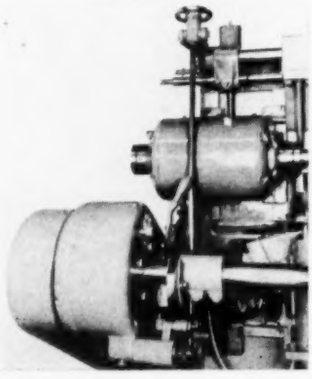
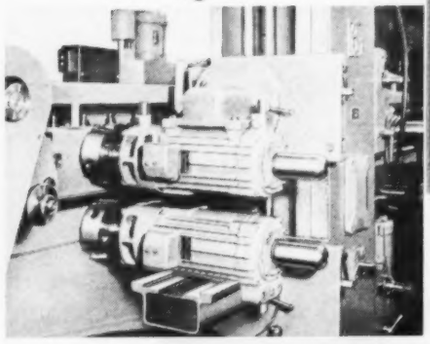
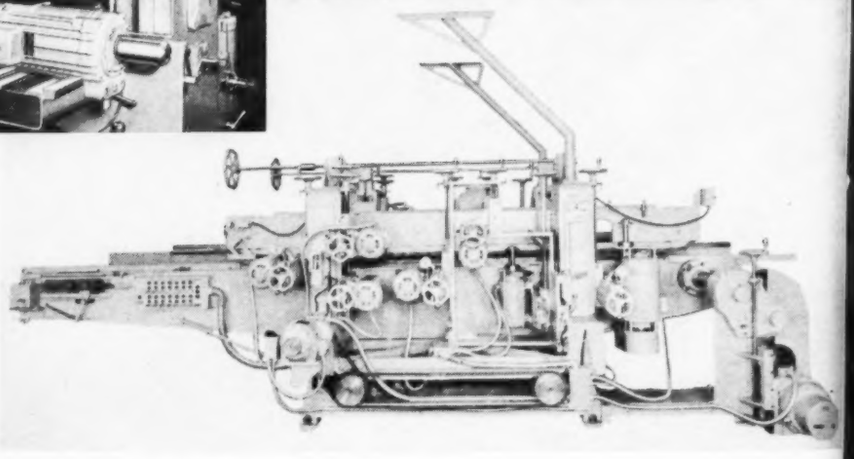


Figure 4





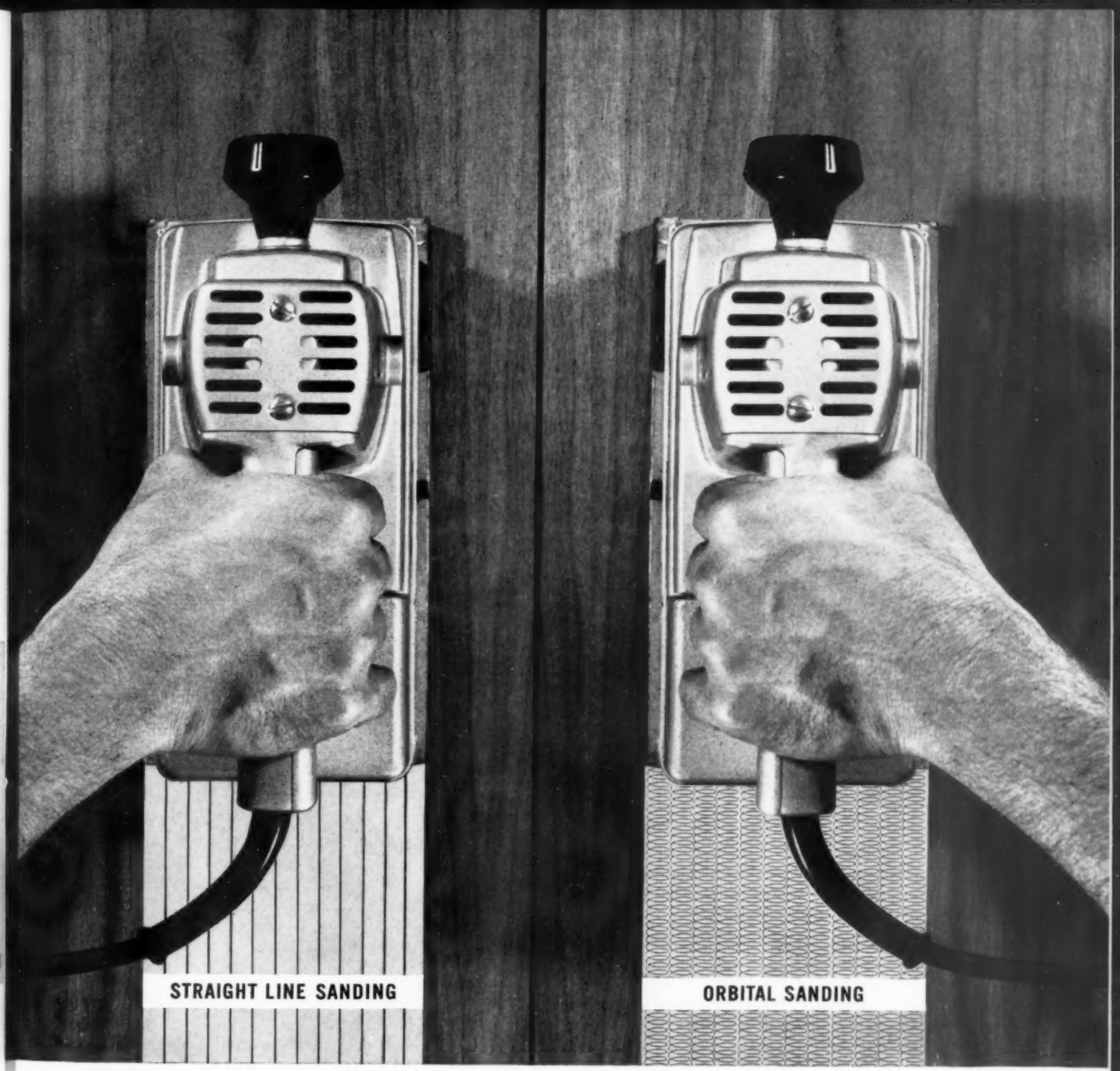
Mereen-Johnson specially built for making lock-joint in cedar chest parts in addition to standard tenoner functions. Three motors in center of machine at outfeed sides of top and bottom tenon motors mounted on slide adjusting horizontally from feed chains are set in same relative positioning always and have individual horizontal and vertical adjustments. They may be moved in and out as a unit when not doing lock-corner work.

chining operations. The automatic slowdown was controlled with limit switches tripped by leading and trailing edges of the stock.

Some tenoners were fitted with rattle-type safety clutches which threw out against spring pressure and rattled in case of overload from jamming of stock or other causes. This warned the operator to disengage the feed for both his and the machine's protection. Adjustable safety gates were mounted above the feed chains of some machines. These gates could be pre-set to the average thickness of stock to be fed through the machine during a given run. Any oversize stock accidentally placed on the feed chains were prevented from jamming in the feed because the feed motor was instantly switched off and automatically braked the moment the stock contacted the safety gate.

A few of the older tenoners used a spring pressure bar holddown to hold the stock against the feed chains in its travel through the machine. But modern machines generally used a rubber-padded traveling chain on an overhanging pressure beam parallel to the feed chain. These pressure beams were carried in vertically adjustable brackets secured to the columns, or were rigidly mounted through adjustable side brackets onsaw and tenon heads. Some beams had their up-and-down adjustment operated by worm and worm-gear, or gear boxes and screws, actuated by crank, handwheel or electric motor. Others were provided with hydraulic control. Lateral adjustment was commonly made by means of double racks and pinions, operated by a single crank or handwheel for close setting, and by power with the chain beams for longer movement.

Double screws adjusted by a vertical adjusting shaft kept the pressure beams in line and always parallel with the feed chains. Cranks, handwheels and other adjusting devices usually were located convenient to the operator for adjustments while stock was in the machine. Settings were indicated by graduated scales and dials mounted on the



New! Skil Orbit/Line sander does both jobs

world's first heavy-duty 2-way sander

Now you flick a switch to get the right sanding action for any production sanding job with the Model 692.

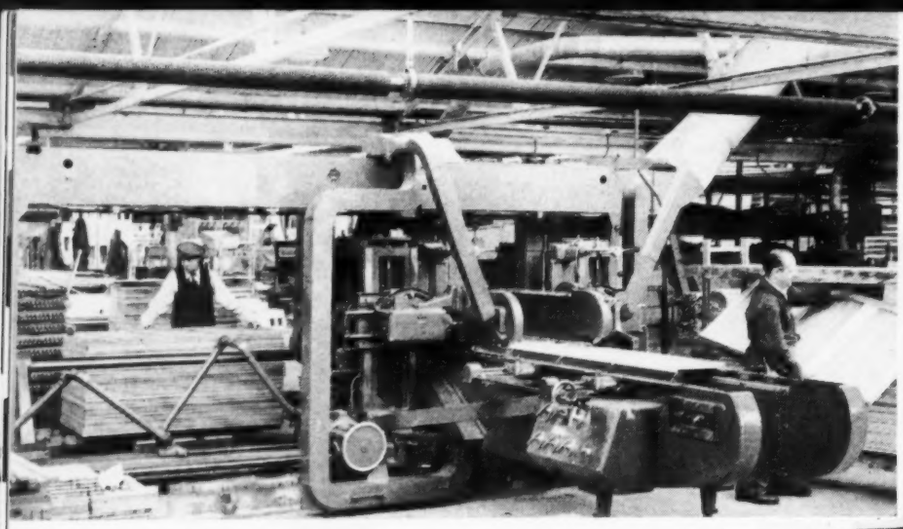
One minute it's a heavy duty orbital sander for fast stock removal (perfect whenever the sanded surface will be painted). The next minute it's a straight line sander for fine, swirl-free finish work (perfect when the sanded surface will be stained, varnished or lacquered).

Has plenty other features like an exclusive 3 position front knob that also mounts on either side for extra convenience.

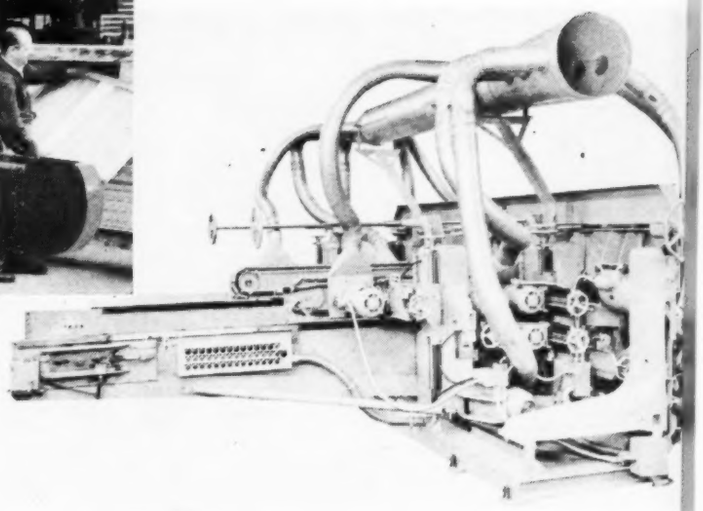
Ask your Skil distributor for a demonstration. Look under "Tools-Electric" in the Yellow Pages. Or for full information write: Skil Corporation, Dept. 150H, 5033 Elston Avenue, Chicago 30, Illinois.

Model 692 ($69.50). Also available as Model 693 ($79.50) with dust pick-up kit that attaches to the vacuum cleaner.

SKIL ... and SKILSAW POWER TOOLS



Wadkin double end tenoner used to size, edge-round and groove table tops.



Mereen-Johnson motorized double end tenoner features welded steel construction, built-in piping, easy-access controls, and jump dado, with cam mechanism driven from drive shaft by roller chain.

adjustment shafts, marked for direction of movement. Positive locking devices maintained exact beam settings during the run.

Free and easy access to cutting heads was provided for changing or setting up heads by allowing the pressure beams to raise sufficiently clear above the heads. An alternate method was to pivot the beams at one end to swing as much as 90° away from the heads.

Pressure beam chains traveled with the work and ran over flat or shaped tracks or ways. The beams of one tenoner carried separate V-shaped tracks reinforced with plastic wear strips to guide the chain. While spring-loaded holddown shoes, small pneumatic tires, rubber rollers and rubber blocks were used for holddown purposes, the rubber-padded type of pressure chain designed to prevent marring of the stock was generally favored. The chain was sometimes mounted on ball-bearing rollers or wheels so that it was free to revolve with the variable speed of the main driven feed chain. This arrangement reduced friction and permitted stock to be run through the tenoner without the use of dogs in many applications.

Rubber pads were fastened to the pressure chain by various means. The rubber pads of one chain were vulcanized at the bottom to metal plates securely fastened to the chain. The purpose of the metal plate was to keep the rubber pad from buckling at the ends and sometimes kicking the workpiece forward. While the rubber-padded pressure chain usually showed an opening between the pads at the end, one chain used a different pad designed to prevent this. This rubber pad was molded at the ends to permit the front end of the rear pad to project into the hollowed-out back end of the pad in front. Thus a continuous and constant rubber holddown surface was applied to the stock.

A tenoner of foreign make incorporated a unique holddown pressure arrangement reportedly designed to permit the use of shorter chain beams and allow machining of heavy profiles on stock held by a single pressure belt and feed chain. In this machine the stock was held to the feed chain by a live overhead pressure unit consisting of a heavy-duty profiled rubber belt forced down upon the stock and kept in line by spring-loaded pulleys.

This pressure belt was adjusted to a variable speed slightly faster than the feed chain speed for large panels machined while held behind the feed chain dogs. This adjustment exerted a forward tug on the stock, holding it firmly against the dogs during the machining operations. The pressure belt was disconnected and idled when stock was placed in front of the feed dogs.

Pressure holddown chains were lubricated by various means, such as metered lubricant fed through felt pad wipers, conventional pressure oiling systems, and spring-loaded grease lubricators.

Safety switches on the beams provided instant stopping in the event of a jam. Some machines carried an automatic squaring device on one of the holddowns. Others had their pressure beams fitted with spring-loaded drag shoes to bring both ends of the stock up to the feed chain dogs and square with the headstocks before the stock came into contact with the first cutting heads.

Various automatic hopper and chain feed loaders aided in feeding stock. They were easily and quickly adjustable for various sizes of stock. These handling devices kept the tenoners operating at near full capacity and permitted higher feed chain speeds for increased production. Automatic return feed mechanisms, which usually rode on carrying tracks below the machine, delivered finished stock back to the operator, eliminating the need for an off-bearer on some jobs.

(To be continued.)

6 NEW prong TEENUT®

Note how prongs toe-in after Teenut is driven into hole. Toe-in action plus multiplicity of prongs increases push-out resistance far beyond that of other pronged fasteners.

BOOTH #9
South Exhibition Hall
N.A.F.M. Show

gives you greatly increased push-out resistance

Here's an easily concealed threaded fastener that's built like a miniature bear-trap . . . with six claw-like prongs that penetrate, toe-in and grip so tight you really have to pound it to back it out of its hole.

With the new 6-prong Teenut, you'll cut your rejection rate and eliminate that old problem of the "lost fastener" . . . because this is one pronged nut that stays where it's put.

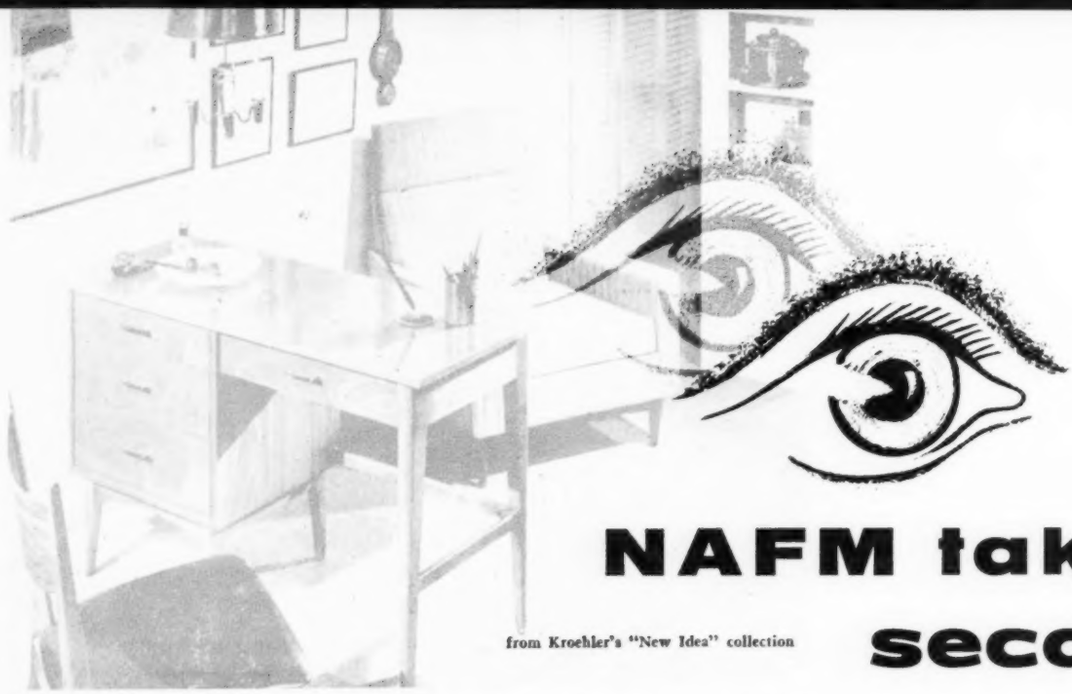
Full engineering details and prices on request. Currently available in the following sizes: 8-32, 10-24, 10-32, ¼-20, 5/16-18.

CARR FASTENER COMPANY
Division of United-Carr Fastener Corporation, Cambridge 42, Mass.

FURNITURE DOT® FASTENERS

Offices in: Atlanta, Boston, Chicago, Cleveland, Dallas, Detroit, Kalamazoo, Los Angeles, Louisville, New York, Philadelphia, Syracuse

For information about any advertised product, see the Advertisers Index and Action Card inside back cover



from Kroehler's "New Idea" collection

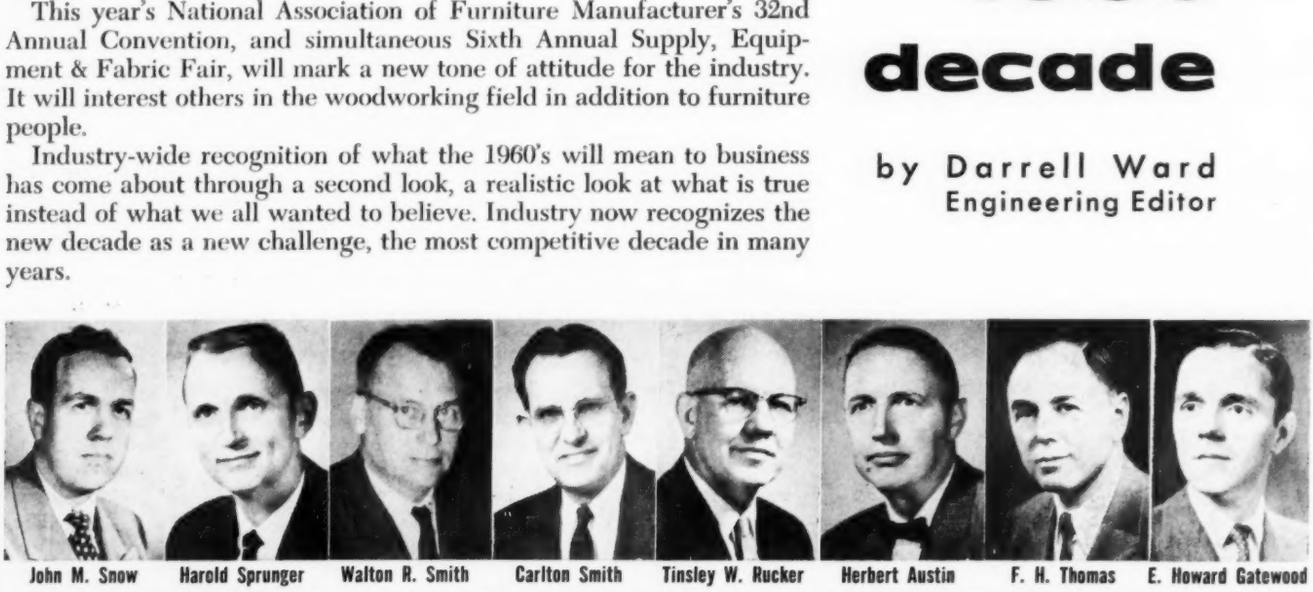
NAFM takes second look at 1960 decade

by Darrell Ward
Engineering Editor

The forecast of the "fabulous sixties" must have been wishful thinking. Last year, both amateur and professional prophets anticipated a decade of prosperity unlimited—until so many adverse factors developed in the over-all economy that we all have to admit that "fabulous" was an ill-chosen word.

This year's National Association of Furniture Manufacturer's 32nd Annual Convention, and simultaneous Sixth Annual Supply, Equipment & Fabric Fair, will mark a new tone of attitude for the industry. It will interest others in the woodworking field in addition to furniture people.

Industry-wide recognition of what the 1960's will mean to business has come about through a second look, a realistic look at what is true instead of what we all wanted to believe. Industry now recognizes the new decade as a new challenge, the most competitive decade in many years.

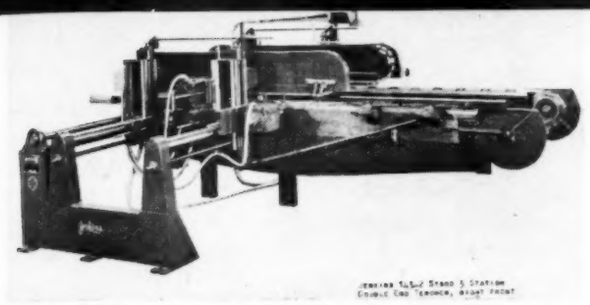


John M. Snow | Harold Sprunger | Walton R. Smith | Carlton Smith | Tinsley W. Rucker | Herbert Austin | F. H. Thomas | E. Howard Gatewood

Jerome L. Metz | Lynn Beman | Gerald J. Skibbin | Robert G. Gill | Dr. Thomas H. Cook | Harold C. Moser | Harvey I. Watson | Al Russell

The 1960 NAFM event will be anything but a namby-pamby affair. Visitors are coming to Chicago with knitted brows and serious intentions of picking up every clue they possibly can find on how to beat production problems, overcome labor situations, reduce costs of manufacturing and promote the wares of our industry. There will be a wealth of clues to pick up in each problem area during the sessions at the Conrad Hilton from August 27 through 30.

Educational sessions are scheduled from 9:00 a.m. to noon on each of the four days while fair exhibits will be opened from noon until 6:00 p.m. Approximately 115 exhibitors will display machin-



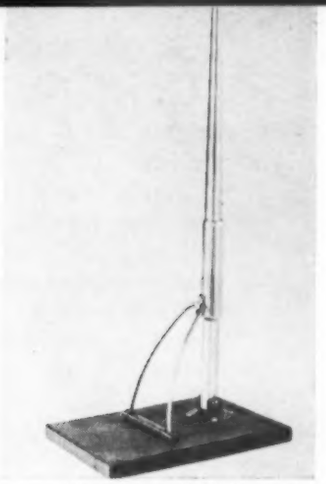
Jenkins 143 2 stand, 3 station double end tenoner is among big machines on exhibit.

ery, tools, component parts, upholstery and supplies; and consultant services in design, engineering, and shipping. About a dozen foreign exhibitors are included this year. We wonder how much nose tilting and snide remarks there will be this time about "the foreigners" cutting in on American trade. Perhaps by now, smug observers of previous years will take their second look at an integral part of the decade of competition. We suspect they will be among the other visitors this year, expressing admiration for both foreign and American innovations designed to extract the utmost efficiency from every piece of material, every unit of horsepower, and every man hour applied to a production line.

If you haven't kept posted on developments in the latest tools and equipment, you will learn much at the Fair. Your interests need not be limited to furniture. This is going to be a real shirt-sleeves display of and search for every competitive weapon you can use to battle through a competitive decade.

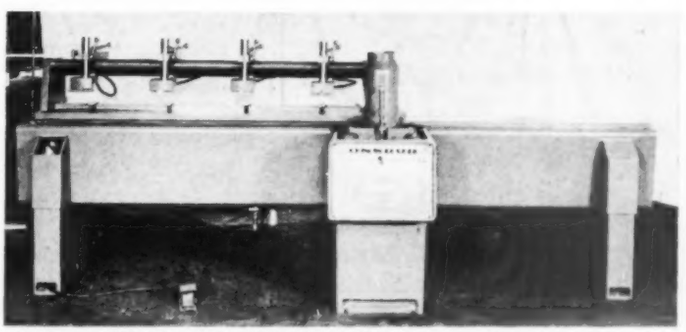
This show will not be a collection of corner-cutting devices and gimmick ideas. We are promised genuine innovations of major proportions in everything from heavy machinery down to hand tools, from large prefabricated components down to fasteners, and many new ideas to snag customers previously reluctant to turn loose the dollars. If you are among the first to utilize the many opportunities you will see and hear at the show, you will be a jump ahead of your slower competition, whether it be domestic or foreign.

Auto-Nailer features pressure nailing—driving 145 nails per minute.

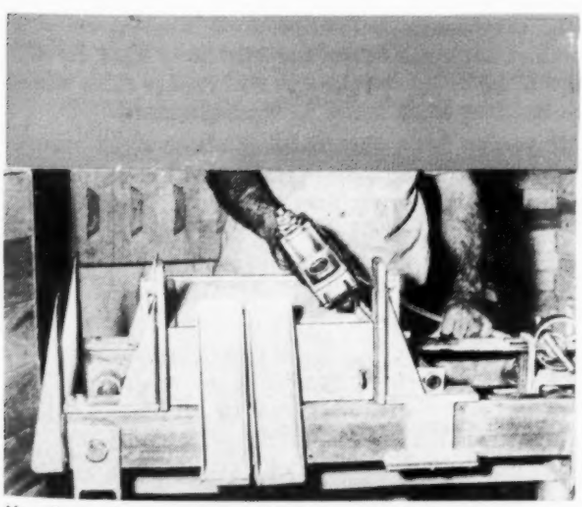


New patented folding metal leg by Wilkenson Mfg. Co., assures rigidity and support.

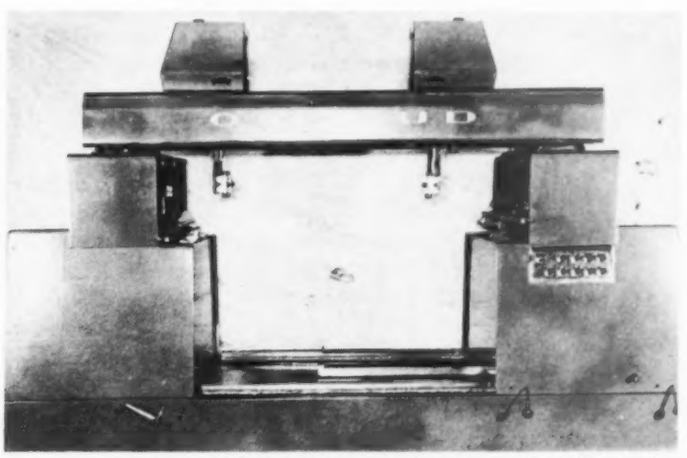
Handsome, sturdy, stain-resistant Daponite plastic resin surfaces are created by Food Machinery & Chemical Corp.



Contour profiler by Onsrud Machine Works, Inc., reduces marking, bandsawing, bandshaping and sanding.



New Spotnailer pneumatic machine gun by Spotnails, Inc. Hercules-9 Model standard



Automatic Double End Dovetailer by Onsrud Machine Works, Inc., loads and unloads automatically, as well as manually.

The Convention sessions will parallel the show exhibits in a hard-hitting approach to a more realistic look into the future.

John M. Snow, NAFM's executive vice president and program planner, said, "Now that we're looking squarely and realistically at this decade, it shapes up as the highly competitive 60's. Realizing that to meet this challenge, manufacturers are taking a hard look at operations to increase efficiency and reduce costs, our program will present a thorough and vivid presentation of the newest in production and management techniques.

"Backing the morning educational sessions will be the afternoon reviewing of the most modern tools, machinery, components, and services that the ingenuity of engineers can devise."

The woodworking sessions are planned for production executives. They will have practical demonstrations of cost-saving techniques. These will be true clinics packed with educational data instead of blue sky discussions of problems.

Speakers on the slate are experts in subject matter assigned to them and well experienced in actual production. Keynoters have been selected to throw out controversial issues to stimulate constructive thinking. From there on, competition and how to beat it in a tough market situation is the essence of this year's NAFM convention.

Here is an idea of the schedule:

SATURDAY, Aug. 27, 9:00 a.m. to noon—Panel on relative merits of fan drying and conventional kiln drying with Walton R. Smith, Chief, Div. of Forest Utilization and Res., U. S. Dept. of Agriculture; Carlton Smith, President, Carlton Smith Industries; R. H. Elliott, Standard Dry Kiln Co.; Tinsley W. Rucker, President, Dixon Powdermaker Furniture Co., and NAFM's First Vice President. This panel of experts will outline new cost-saving techniques and discuss manufacturer problems.

SATURDAY, Noon—Exhibits officially open for inspection until 6:00 p.m. with same schedule for each day of the show.

SATURDAY, Noon—Luncheon sessions will open a presentation of the new Finishield surfacing for fine hardwoods which gives a resistant finish equal to plastic surfacings. A panel of three finishing experts: Herbert Austin, Manager, Dri-Line Field Development, Polymer Industries; Harvey I. Watson, Manager, Industrial Foil Sales, Aluminum Co. of America; and F. H. Thomas, Sherwin-Williams Co.; will discuss when and how the new finish is to be applied. Howard Gatewood, Executive Vice President, Fine Hardwoods Assoc., will moderate.

SUNDAY, Aug. 28, 9:00 a.m. to noon—Panel on newest advances in sanding techniques and equipment. Demonstrations and individual manufacturer problems will be explored. Panelists are J. L. Metz Furniture Co.; Edward Levert, Sales Manager, Minnesota Mining & Mfg.; Al Russell, Regional Sales Manager, Behr Manning Co.; with A. L. Fader of A. L. Fader Machinery Co., moderating.

MONDAY, Aug. 29, 9:00 a.m. to noon—Two sessions starting with "The Future in Management-Employee Relations" to discuss how management should "cut its cloth" in dealing with labor, an off-the-record session headed up by NAFM Management & Labor Consultant, Lynn Beman.

"Communications Concepts For Tomorrow's Management," the second session of the morning, features Gerald J. Skibbin, Research Executive, Opinion Research Corp., pointing the way toward more effective communications to develop better employee understanding, minimize grievances, ease tensions, and lessen turnover.

TUESDAY, Aug. 30, 9:00 a.m. to noon—Another double-barreled morning beginning with "Most Modern Developments in Wood Adhesives" from a panel of: Robert Gill, Technical Director, Peter Cooper Corp.; and Dr. Thomas Cook, President, National Casein Co. Harold Moser of Gamble Brothers will moderate. This will be a down-to-earth look into various adhesives of recent origin and what they will do for you, a very liberal education in the first two hours of this last day.

"Controlling Costs, Increasing Production Through Improved Management Techniques" will complete the morning session. This profit-producing presentation by George Phillips, Supervisor, Techno-Economics Research Div., Armour Research Foundation, is centered around an actual case history from the furniture industry. It will show you how improved management techniques brought better cost control, increased production and improved profits.

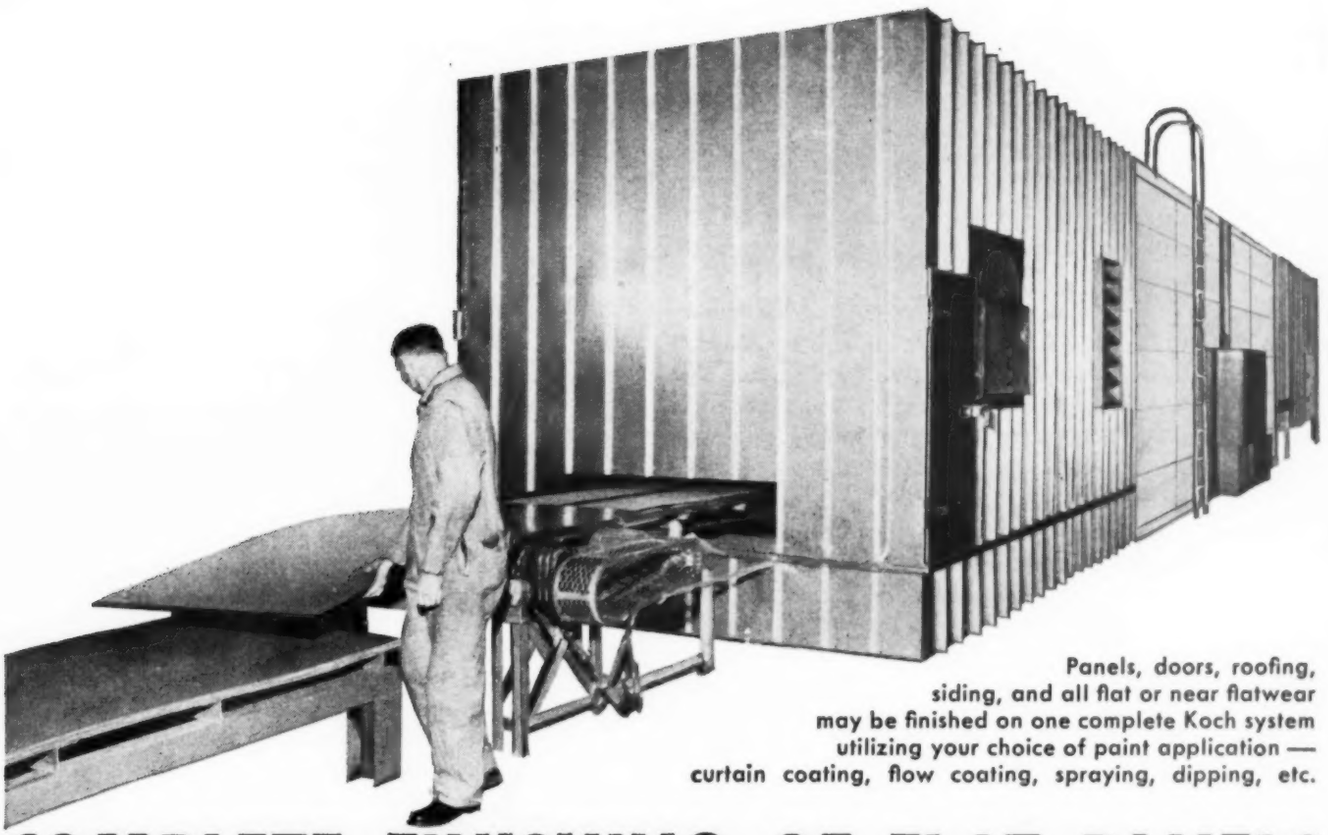
Upholstery sessions are scheduled simultaneously with others for Saturday and Sunday mornings.

If you have any doubt about why you should attend this year's NAFM Convention, ask yourself two questions: 1—Am I obtaining the utmost efficiency from materials, equipment, labor and management? 2—Why is my merchandise moving rather slowly into a market of larger population and greater income?

Tight money is one of the big issues in this competitive race. If you haven't already taken your second look into the 1960's, you'd better catch up with your competition at the show. Emphasis will be placed on two major factors. One is that you will have to cut costs and gain much greater efficiency. The other is that you will have to use more imagination, produce a better product, and make your product so enticing to the customer that he will be willing to accept the 6% and higher rates which are holding back many new investments.

If you've been complaining about tight money, look to your own purse first. You will have to invest a few dollars of your own to be in position to snag more dollars from the market you reach.

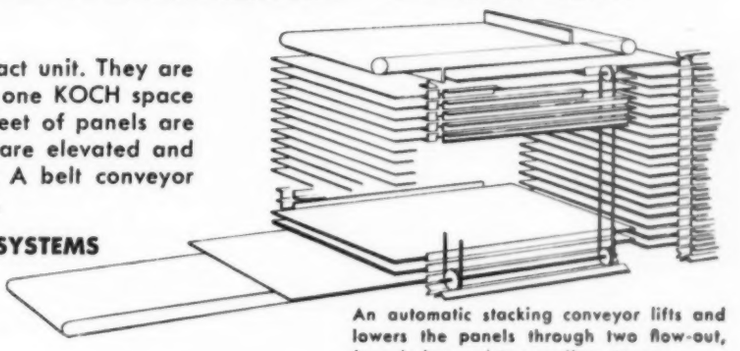
Ideas on how to do this and equipment necessary for the job will be the backbone reasons why it is urgent for you to be at the show this year. And, besides backbone, you'll be able to make good use of a long nose to smell out all the advantages you can apply to your operations to beat the competition. They also are taking a good second look into the 1960's which won't be fabulous but certainly will be famous as one of the most competitive decades in history. See you at the show.



Panels, doors, roofing, siding, and all flat or near flatwear may be finished on one complete Koch system utilizing your choice of paint application — curtain coating, flow coating, spraying, dipping, etc.

COMPLETE FINISHING OF FLAT PANELS ON ONE CONVEYORIZED SYSTEM

Flat panels are finished automatically on one compact unit. They are printed, coated, flowed out, dried and cooled with one KOCH space saving system! By using stacking conveyors, 1152 feet of panels are completely cured in an 80 ft. tunnel oven. Panels are elevated and lowered alternately through a 3-stage curing unit. A belt conveyor delivers them to the shipping room ready for packing.



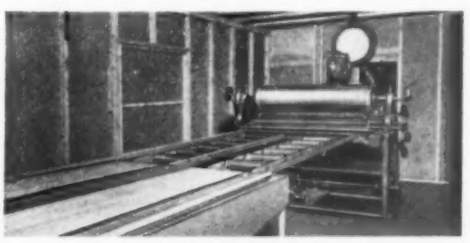
An automatic stacking conveyor lifts and lowers the panels through two flow-out, four drying and two cooling stages.

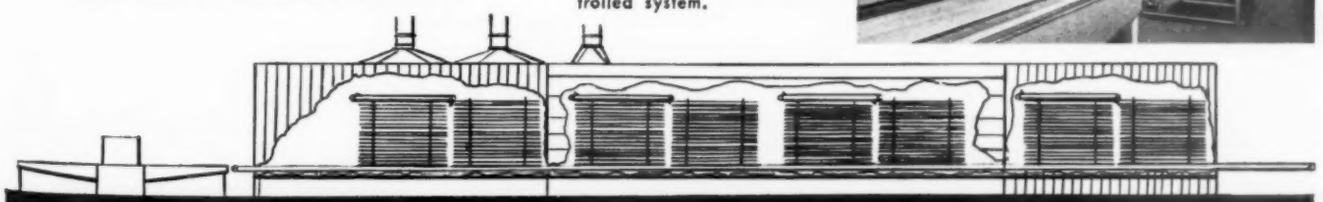
LOOK TO KOCH FOR COMPLETE FINISHING SYSTEMS FOR WOOD OR METAL PRDUCTS

George Koch Sons, Inc., has over eighty years experience in engineering, manufacturing and installing finishing systems for wood and metal products. You are assured a trouble-free production line with a substantial saving in costs of manufacture and maintenance.

Write for data file of KOCH INDUSTRIAL EQUIPMENT

Panels are printed on a roller graining machine and sped immediately through a Steinemann curtain coater. A double belt carries them into a stacking conveyor to be cured in a humidity controlled system.





GEORGE KOCH SONS, INC. Evansville 4 Indiana

Here's why we're up to our ears in screws! ...SOUTHERN SCREWS

A stock of 1,500,000,000 fasteners is a whale of a lot of screws, bolts and nuts. Why maintain such a huge stock? Why mention it in our ads?

The reason 1,500,000,000 fasteners are stocked in Southern Screw's Statesville plant is to let you know that regardless of the size, head style, materials or finish of the standard fasteners needed for profitable assembly in your plant, Southern carries them in stock. This means that your order, large or small, can be on its way to you within hours after it is received, if you request rush service.

And you can be sure that the Southern fasteners you order are quality fasteners made with the know-how that comes from nearly 15 years of specialization in fasteners exclusively.

YOU are the reason we are up to our ears in fasteners! Southern makes them for you, stocks them for you. We are ready — today — to fill your order, whether for standards or for specials. Ask your local Southern distributor for our current Stock List or write direct to: Southern Screw Company, P. O. Box 1360, Statesville, North Carolina.

Southern SCREW COMPANY
STATESVILLE • NORTH CAROLINA

Manufacturing and Main Stock in Statesville, North Carolina
Warehouses: New York • Chicago • Dallas • Los Angeles

- Wood Screws • Dowel Screws
- Hanger Bolts • Drive Screws
- Stove Bolts • Carriage Bolts
- Machine Screws & Nuts
- Tapping Screws

around the shop

This monthly feature answers readers' questions on common shop problems. If you wish to present a problem, or desire further discussion of problems discussed here, write to the Editor.

Flat Fee or Salary

We are contemplating hiring commercial help in our design problems in an effort to restyle our furniture line. What is the best method of payment for this service –flat fee, retainer, royalty or salary?

Various professional designers have their own special arrangements from which they will not deviate so it must be assumed that you have been given an unusual choice. The flat fee is generally not too satisfactory as the designer has no chance to perform a complete service and is freed of all responsibility upon acceptance of the design. Few designers will work on this basis.

The retainer insures continuing service on a yearly basis and usually develops a better design program. This plan involves perfect understanding and agreement upon services to be performed and time made available for performance of same. This plan restricts the designer's services to a limited number of clients.

The royalty insures the greatest interest of the designer in sound, salable designs as his financial returns are based upon the actual sales and he is very interested in the commercial success of his designs. Royalty percentages vary with type of product, price range, location and other factors but range generally from 2-6%. Royalty arrangement must also provide for designs prepared but not used for any reason and advances against royalties to be received.

The salary payment plan presupposes sufficient volume of work for year-around employment and usually includes other duties than just design and development. While this plan insures exclusive rights to the designer's services, the staff designer does not have as many outside contacts as the free-lance designer and he may become less aware of consumer demand trends.

Considering the foregoing qualifications, it would seem that the royalty percentage plan would provide the most advantages and return the largest volume of sales per dollar spent for design and development.

Low Voltage Heating Explained

We import furniture from various countries in Europe and Asia for sale and distribution in this country. Descriptive literature enclosed with a recent shipment of molded plywood stacking chairs states the glue bond was cured by low voltage heating. Can you explain low voltage heating in simple terms?

Low voltage heating is actually electric resistance heating in which heat is produced when electric current is passed through a high resistance conductor, called a heating element. Heat may be transferred to the work from the heating element by convection, radiation or conduction or by a combination of any or all of these. As used to provide heat to cure the glue bond, the heating element is usually a bare wire or strip of suitable material supported on electrical insulation with capacity to withstand the temperature produced.

The operating principle of this heating method is based upon the fact that when electric current flows through a metal wire or strip there is a definite rise in temperature. The amount of temperature rise depends primarily upon the resistance of the metal and the square of the current. Materials are selected for the highest resistance possible. This is a function of the kind of material, with copper and stainless steel being generally preferred in this country. Resistance of the material becomes greater with reduction of thickness but for practical purposes the material must be thick enough to provide sufficient strength for industrial use and not disintegrate in air at normal operating temperatures of 300 F. to 350 F.

Length of the wire or strip elements used is determined by the voltage and the electric current required is related to the width of the strip. If the current supplied to the strip is not correct for the

thickness, width and type of material, heat cannot be produced to meet requirements. Voltage is usually controlled by transformers operating on 220 volt, 60 cycle, single phase power supply, with popular sizes rated at 1.5 and 3 KVA. Flexible cables connect the transformer with terminal bars fastened to the heating elements and temperatures are controlled by amount of current input, by thermostat or by a timer.

Resistance heating is used mostly in this country for edge banding and similar operations although a few plywood molding operations for thin plywood have been reported. The heating element strips are mounted upon wood forms shaped to the desired contours or sheets may be used to face them. When connected to the transformer for controlled current flow, a molded plywood part may be bonded in from 4 to 6 minutes by low voltage heating.

While not as fast bonding as high frequency heating, resistance heating is claimed to generate almost twice as much heat for each kilowatt of current used.

One of America's LARGEST and OLDEST INDEPENDENT MACHINE KNIFE MANUFACTURERS

Since 1891 The Wapakoneta Machine Company has grown in plant, equipment and skills. Today it is one of the largest plants in America devoted exclusively to the production of machine knives.

Wapakoneta produces knives for every industry, including woodworking, paper and pulp, veneer, plywood and steel. The woodworking industry alone requires hundreds of different types and sizes. Wapakoneta makes them all and engineers each to the specific job. The type of steel, the size, shape and bevel as well as other special features get the attention possible only with Wapakoneta's more than 65 years' experience and craftsmanship.

A complete catalog is free. Write for it.

WAPAK KNIVES

THE WAPAKONETA MACHINE CO.

WAPAKONETA 1, OHIO / Export Div. - 30 Church St., N.Y.C. 7

Knives Engineered for the Job Since 1891

Remedy Needed For Resaw

I have carefully ground the wheel faces of my band resaw flat but the smaller bands continue to run ahead or to the back of the wheel. What can I do to correct this?

We don't doubt your word, but this action indicates that the wheel face may still be slightly hollow. Even with a slight hollow, either the front or back tire will try to locate the low spot. Good insurance against this is provided by grinding a slight crown located in the center of the narrowest band saw you run. This does not necessarily come in the center of the wheel. Build up the crown flat, not curved, straight from each edge of the wheel to the crown. Good results are obtained when the circumference of the wheel at the crown is about 1/32" longer than the edges but this may vary with size of the wheels. You will find that the tires of the band saw will straddle the highest spot and run true.

What Grades For Oak Flooring?

We are considering the production of oak flooring. Could you give us a brief description of grades, types and sizes and their common uses?

A flooring manufacturer provided the following descriptions for quick reference:

Clear Grade—face free from defects, in bundle lengths of 75%—4'-6', and 25%—2'-4'; used where fine floor is required.

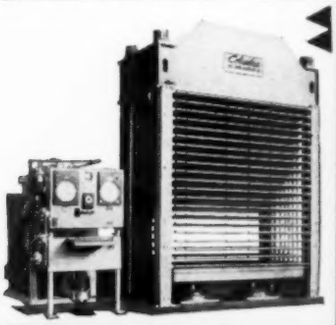
Sap Clear Grade—face free from defects, in bundle lengths of 75%—4'-6', 25%—2'-4'; used for fine floors.

Select Grade—allows sapwood, pin wormholes, streaks, slight working imperfections and small tight knots; used for average priced domestic work; 2' minimum length, 4' average.

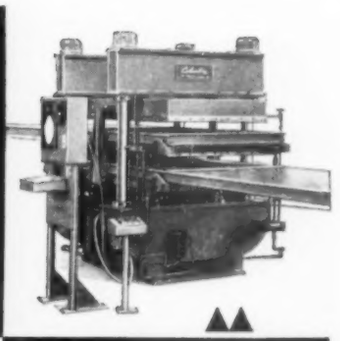
No. 1 Common Grade—allows any defects that will not prevent laying of sound floor; lengths—2'

. . . for time and money saving production of

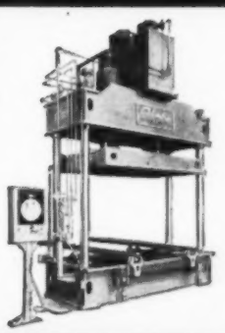
pick a
TIME-PROVED INDUSTRY-APPROVED
Columbia
HYDRAULIC PRESS



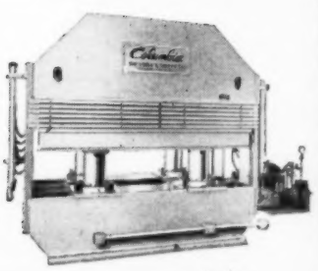
HOT PLATE PRESSES . . . 15 outstanding features for top production and quality, saving time and money. Rigid design, trouble free hydraulic system and honest rating guarantee dependable performance.
Request Bulletin HP-300.



COLD LAMINATING PRESSES . . . proved for low-cost operation. Available in a complete range of sizes and types; upstroke and downstroke models; pressures to 200 psi. Convertible to high frequency operation.
Request Bulletin HP-200.



SHUTTLE PRESSES . . . designed and pioneered by Columbia to utilize labor to the fullest extent. Handlers discharge and reload one caul while load on other is under compression in the press.
Request Bulletin HP-400.



HIGH FREQUENCY PRESSES . . . double duty: cold laminating or with high frequency heating for fast production of large or small lots with low-cost, shop-made forms for better curved laminated panels.
Request Bulletin HP-300.

FLOOR TYPE PRESSES . . . offering one to five daylights and economy of installation and operation. Feature most advanced hydraulic and mechanical equipment. Available in end and side-loading models.
Request Bulletin HP-400.

Columbia Hot Plate, Cold Laminating and High Frequency Presses incorporate modern, proven features which assure production output, quality and efficiency with trouble-free performance. Their industry-wide acceptance is the result of many years of experience in design and manufacture of presses.

For detailed COLUMBIA literature, write:
The LODGE & SHIPLEY Company
3061 Colerain Ave., Cincinnati 25, Ohio

Type	FLOORING SIZES		
Tongue-and-groove	1" x 3"	25/32" x 2-1/4"	25/32" x 2-1/4"
sides and ends	1" x 2-1/4"	25/32" x 2"	25/32" x 2"
with hollow back	1" x 2-1/4"	25/32" x 1-1/2"	25/32" x 1-1/2"
Tongue-and-groove	1" x 2-1/2"	1/2" x 2"	15/32" x 2"
sides and ends with	1" x 2"	1/2" x 1-1/2"	15/32" x 1-1/2"
grooved back	1" x 2-1/2"	3/8" x 2"	11/32" x 2"
	1" x 2"	3/8" x 1-1/2"	11/32" x 1-1/2"
Square edges and	1" x 2"	5/16" x 2"	10/32" x 2"
ends	1" x 1-1/2"	5/16" x 1-1/2"	10/32" x 1-1/2"

minimum, average 3′; used for low-cost domestic and factory work.

No. 2 Common Grade—allows any type of defect that will not prevent laying a serviceable floor; lengths from 1′ 3″; used for cheap domestic work and loft and factory floors.

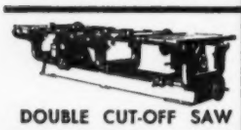
• arbor accommodates as many saw blades, dado heads or groovers as required

• rips panels of any length into strips of any width . . . can dado, groove simultaneously

The Beach Panel Sizing Saw is specially designed for safer, more accurate, more economical multiple precision ripping, dadoing, grooving.

It can be easily, quickly adjusted to the requirements of a job; blades may be added to, or removed from the arbor without tearing down the machine! A double set of power-driven feed rolls prevents creeping or kicking back. Several standard size models; maximum cutting widths of 24″ to 54″ Special sizes available.

TILTING TABLE SAW


DOUBLE CUT-OFF SAW

SHAPER

Write today for full details on Beach Panel Sizing Saws!

BEACH
MANUFACTURING CO.
MONTROSE, PA.

Furniture Factories Have Fires

I am preparing a speech to be delivered before a group of furniture executives describing the fire hazards common to their industry. Can you provide me with some facts about typical furniture factory fires, their causes and estimated losses for reference?

The following were provided by the National Fire Protection Association, a non-profit technical and educational organization:

Salamanca, N.Y.—estimated loss $12,000, caused by a static discharge between a workman cleaning a spray booth and the booth which ignited lacquer material on the booth walls.

Benton, Ark—estimated loss $21,000, caused by defective wiring in an unused light fixture in attic of wooden section.

Keene, N.H.—estimated loss $1,125,000, caused by defective motor driving exhaust fan in spray booth.

Piney Flats, Tenn.—estimated loss $65,000, caused by defective electric motor in a unit heater and spread quickly through unsprinklered wooden building.

Winston-Salem, N.C.—estimated loss $1,935,700, 1 dead, cause flash fire in spray booth with spread accelerated by openings made in fire walls for conveyor installation.

Chicago, Ill.—estimated loss $142,000, cause unknown but fire spread was accelerated by closed dry pipe valve controlling sprinklers.

Keene, N.H.—$40,000 estimated loss, caused by spontaneous combustion of enamel residue cleaned from spray booth left in a cardboard box.

High Point, N.C.—estimated loss $96,000, caused by defective wiring behind spray booth.

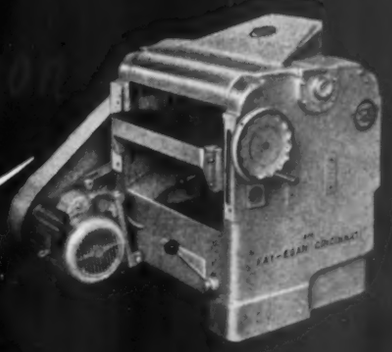
Herkimer, N.Y.—estimated loss $90,000, caused by backfire of steam boiler fired with wood waste.

Hialeah, Fla.—estimated loss $35,000, caused by carelessly discarded cigarette in spray room.

Van Nuys, Calif.—estimated loss $100,000, cause thought to be ignition of lacquer residue on roof while hot asphalt was being used to make spot repairs to roof.

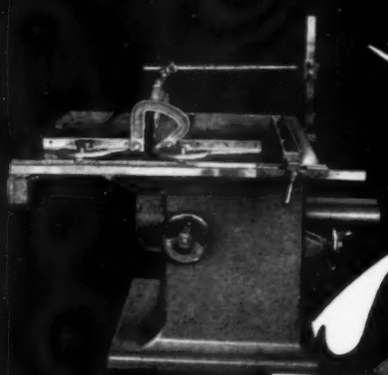
East Paterson, N.J.—estimated

CHECK THESE PRICES!



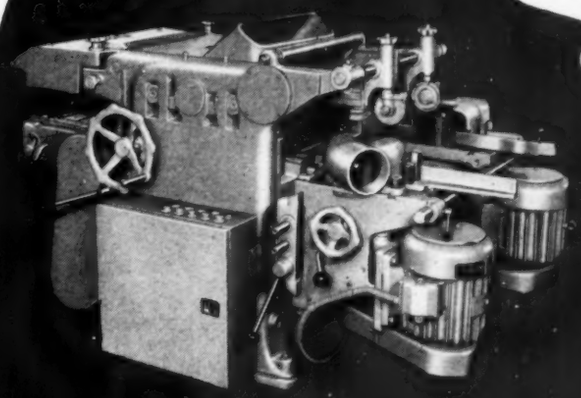
No. 970 24" Surfacer 7½ H. P. Motor—Four Knife (knife grinder available)

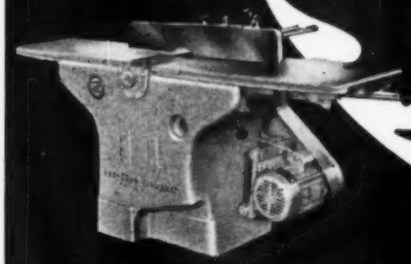
$1500. F.O.B. FACTORY



No. 511-B Tilt Arbor Saw 5 H. P. Motor—18" Blade

$1260. F.O.B. FACTORY





No 975 — 16" Hand Jointer 5 H. P. Motor Four Knife Cylinder

$1095. F.O.B. FACTORY

$995. F.O.B. FACTORY

No 940 — 24" Band Saw—3 H.P. Motor

FAY & EGAN CO.

2023 EASTERN AVENUE, CINCINNATI 2, OHIO

Telephone PLaza 1-0730

World's Oldest Manufacturers of Woodworking Machinery

SEND COUPON

FOR MORE INFORMATION

969____ 970____ 940____ 975____ 511-B____

NAME _____

ADDRESS _____

TOWN _____

**Speeds Output 33%,
Cuts Material Costs**

Production goes up . . . labor costs go down . . . when you *push-button* your pre-finishing jobs with the Union Pre-Finish Line.

In a typical application, this unique conveyorized system works like this: (1) Flat stock is fed into a brush roll machine which cleans both surfaces . . . (2) Roller coater applies lacquer or other coating . . . (3) Stock passes along drying conveyor to (4) flap wheel sander which lightly sands top surface . . . (5) Another roller coater applies second lacquer sealer . . . (6) Stock is bake-dried in infra-red drying oven and moves to (7) Cool Out Elevating Tower, an ingenious space-saving rack which holds 25 sheets to give lacquer time to set . . . (8) When sheet reaches top of tower it enters a stacking device which drops in onto a waiting skid.

The Union Pre-Finish Line, or any section of the line, can be custom-engineered to suit your specific operation. Get full details about this time-saving, labor-saving system today!

900 North Detroit Street

THE
UNION TOOL CORPORATION
WARSAW, INDIANA

UNION-WALLACE-INDIANA
A MANUFACTURING GROUP
DEVOTED TO PRODUCING
THE HIGHEST QUALITY
WOODWORKING MACHINES

**NEWEST instruments
for quality control—
GIVE INSTANT, ACCURATE
LUMBER MOISTURE CONTENT!**

*Models R-6 and V-6
operated by one hand!*

Calibrated for 60 hard and soft woods in the 0-25% range, the new Model R-6 is an all-purpose lumber instrument. For all forms of lumber, plywood, and stacks of veneer, the R-6 has a penetration field up to 2", using a radio frequency power-loss circuit.

Model V-6, with a slightly modified electrode, gives the same instant, accurate answers on single thicknesses of all kinds of wood veneers in the 0-15% range.

Both instruments weigh less than 3 pounds. Both are one-hand-operated, leaving the other free for recording and moving test material. Both have self-checking standards—and trimmers to permit balancing on the spot. Battery-operated. Ruggedly built. Circuit board instrumentation.

Complete with carrying case,

$175.00 ea. *f.o.b. Alhambra, California.*

ELECTRONIC
MOISTURE REGISTER
INSTRUMENTS

For complete information, write to: WWD

Moisture Register Company • 1510 Chestnut St. • Alhambra, California

loss $125,000, caused by explosion of flammable vapors from open dip tank.

Fort Smith, Ark.—estimated loss $3500, cause thought to be ignition of sawdust and paint residue on roof by spark from the boiler stack.

Williamsport, Pa.—estimated loss not given, caused by spontaneous ignition of paint rags stored in wooden barrel next to steam pipes.

Brockton, N.Y. — estimated loss $400,000, caused by careless use of welding torch near a spray booth.

Whitefield, N.H.—estimated loss $450,000, caused by lightning striking elevator penthouse on top of roof.

New Toronto, Ontario, Canada—estimated loss $4600, caused by hot fragments from an exploding lamp in an infra-red drying oven which ignited flammable vapors in an adjoining spray booth.

Rockford, Ill.—estimated loss $90,000, caused by spark from tramp metal fed into wood hog in basement.

Los Angeles, Calif.—estimated loss $100,000, caused by small children playing with matches in paint storage building.

What Is "Fixed Waste"?

An engineer making a study for the control of waste in our plant uses the terms "fixed waste" and "variable waste" but refuses to define the two classes for my information. Can you define these terms as they relate to rough lumber cutting operations?

In the conversion of rough lumber fixed waste is produced by cutting a certain length of lumber (as a 16′ board) into a specified length or group of lengths of shorter cuttings. It does not vary with the lumber grade and is a dimensional consideration involving the maximum number of specific cuttings which may be obtained from a specific length of lumber. It is sometimes used to designate the allowance that must be added to the net size of a finished part for subsequent trimming and machining.

Variable waste, on the other hand, comes from defects occurring within the board and will vary with lumber grade and size and grade of cutting to be made from the board.

AIR PLIER'S "D"

Operation is simple—insert the work and press the trigger. Air pressure draws the anvil into position. Variation of the clinch may be obtained by regulating air pressure without affecting staple penetration.

MODEL "E"

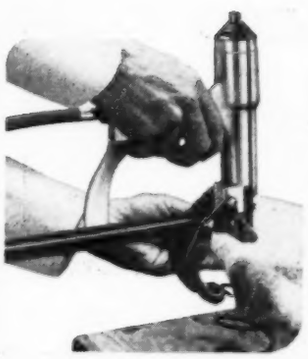
By far the speediest tool of its type on the market. This tool has feather touch tripping action which eliminates all effort in achieving terrific speed. It is used like a hammer.

NEW MODEL "J"

AIR RETURNED--DRIVEN

WEIGHT..... 2 LBS.
OVERALL HEIGHT..... 5¼"
MAGAZINE RAIL..... ½, ¼, 3/16"
STAPLE CAPACITY..... 180
LENGTH OF STAPLE..... ½, 3/8, 5/16, ¼, 3/16, 5/32, ⅛"
DISPLACEMENT ONLY....78 CU. IN.
REQUIRED PRESSURE....70 - 100 P.S.I.

Released May, 1960



MODEL "F" PORTABLE SISAL MACHINE

Delivers leverage with a "vice like" grip. Staples bend and clench neatly every time. New "Vise-jaw" opening twice that of any similar machine, overcomes problems of variable thickness.

SUPER MODEL "H" REBOUNDLESS

Features air return. Very light-pull trigger. Trouble free automatic valve simplified to 2 moving parts. Most powerful tacker for its air displacement.

See us at BOOTH 110-111 NAFM Show

Sales and Service Branches-Distributors All Principal Cities U.S.A. — Canada — Europe

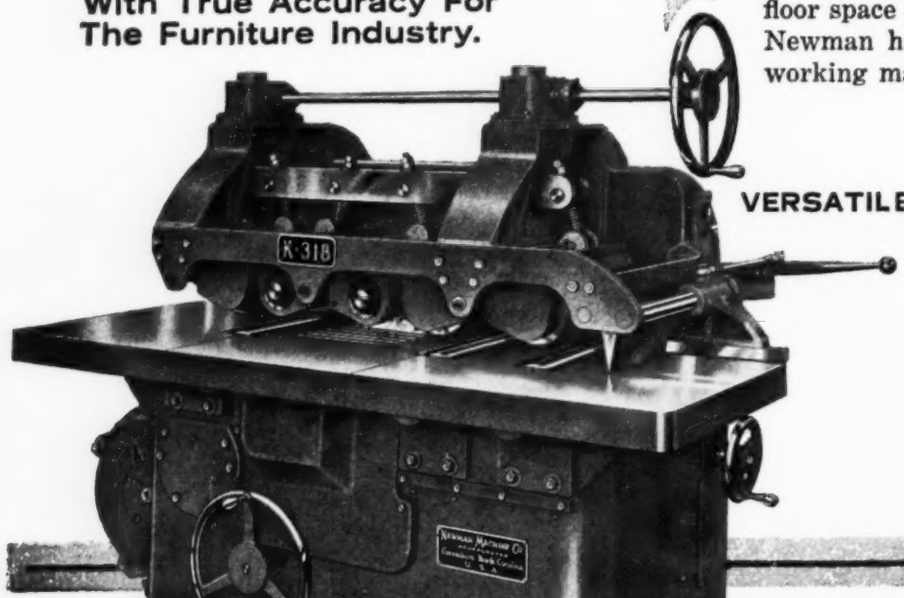
Senco PRODUCTS INC.
5566 WOOSTER PIKE CINCINNATI 27, OHIO

Newman K-318 Multiple Rip Saw

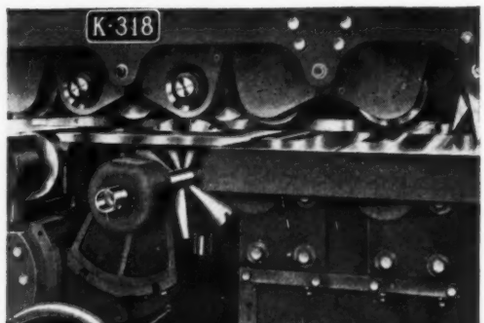
A High Speed, Compact Saw With True Accuracy For The Furniture Industry.

The truly accurate Newman K-318 Multiple Rip Saw is available in widths to handle 12", 18" or 24" stock. It's available with 4, 6 or 8 feed rolls, with all rolls powered for maximum control and accuracy. All upper roll yokes are ductile iron for greater strength. Solid one piece aluminum throat plate and vertically adjustable saw arbor are proven features for the furniture manufacturer. This compact, rugged machine frees valuable floor space in crowded furniture plants. Newman has built quality woodworking machines for over 50 years.

VERSATILE...COMPACT...ACCURATE



WOODWORKING MACHINERY MANUFACTURERS' ASSOCIATION WMMA



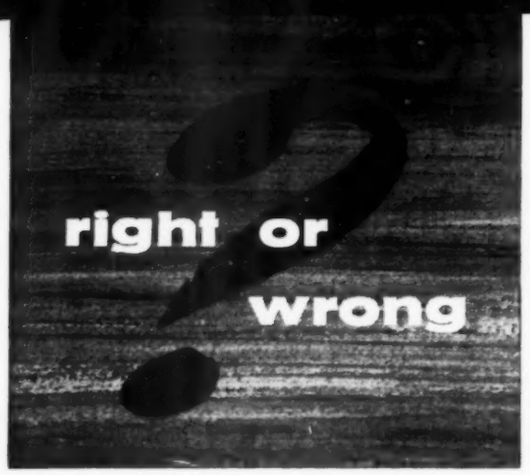
Saw Arbor • Throat Plate • Feed Rolls

Other Machines In The Newman Line:

- MATCHERS
- VARIETY SAWS
- GRINDERS
- TENONERS
- SURFACERS
- MORTISERS
- JOINTERS

Newman Machine Co., Inc.

GREENSBORO, NORTH CAROLINA, U. S. A.



A roundup of day to day in-plant problems and how they were handled by management men. Each incident is taken from a true-life grievance which went to arbitration. Names of some principals involved have been changed for obvious reasons. Readers who want the source of any of these cases may write to Hitchcock's WOOD WORKING Digest.

Can an employer cut out the "coffee break"?

What Happened

For three years the employees were allowed two coffee breaks a day—one in the morning and the other in the afternoon. At each break the workers left their jobs. As time went on, many abuses developed. The most serious problem was that of returning to machines and desks late. So management decided to cut out the coffee break. Instead it substituted perambulating service so that employees could get their coffee at their work. There was a howl of protest. The workers complained:

1. The coffee break is a working condition and you can't just take it away at will.
2. A coffee break is established practice in industry.
3. The new service is not an adequate substitute. We want to leave our work to drink coffee.

Management took time out to answer:

1. A coffee break is not a "right." We gave it voluntarily. What we give we can take away.
2. A coffee break is for coffee. This we are supplying through the "rolling" lunch wagon.

Was the company: Right ☐ Wrong ☐

What Arbitrator B. Meredith Reid Ruled

"A coffee break is essentially a rest period—a break from the pattern of work—a ceasing of doing what you were doing. The time allowed is to enable the employee to withdraw from labor or exertion for the obvious advantage to the company and the individual of recharging the human physical and mental storage battery. The company is obligated to restore and continue the practice as heretofore carried out, of allowing coffee breaks for the remainder of the contract—unless the practice is changed by MUTUAL consent."

Can a company use men to do women's work?

What Happened

The company has a job which employed 10 women in the past. In a reorganization of the department, the jobs were redesigned. While doing this, the company decided to replace the women with men. In this way, the work could get done with 9 men on the job instead of 10 women.

The ladies protested loudly. These are women's jobs for the most part and you have no right to discriminate against us. Also, they said, just give us a chance and we'll show you that we can even outproduce the men.

ICE BINS or HOT HOUSES

They're at their best with California

REDWOOD

Where insulation is important...where humidity is a factor ...where intermittent wetting and drying occur—those are the jobs where Certified Kiln Dried redwood is unexcelled among commercial woods. Write for specific information on the use of redwood for your product.

CRA

All the wonderful warmth of wood is best expressed in redwood

CALIFORNIA REDWOOD ASSOCIATION
576 SACRAMENTO STREET • SAN FRANCISCO

The company tried to explain that the jobs were different now—and that there were important cost savings in using men instead of women workers.

Was the company: Right ☐ Wrong ☐

What A Board of Arbitration Ruled

"If the employer can demonstrate that his action involves change in job content, monetary savings, production gains and increased flexibility, then he does have a right to introduce a new method of operation and assign exclusively male crews. The company has shown these facts, and this arbitration board holds that the company was justified in its action. The grievance of the women employees is denied."

When can't you fire a worker for drunken driving?

What Happened

Following his conviction in the Municipal Court for drunken driving, John Jones was discharged by the company for that reason.

He insisted that the company had no right to do what it did for a long list of reasons:

1. I was not driving a company car. It was my own.
2. I wasn't on company time.
3. I have no influence in the community. I'm an "unskilled worker" and therefore I can't hurt the company's reputation no matter what I do.
4. I have already paid my penalty for the drunken driving with a conviction by the court.

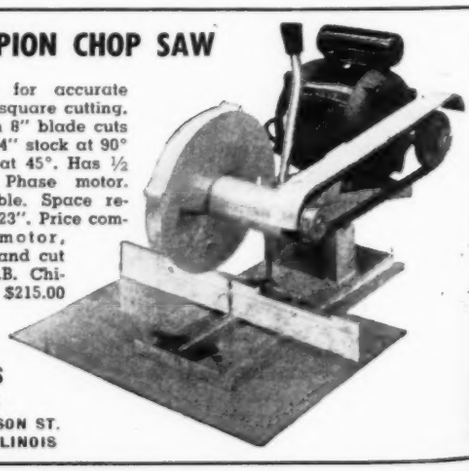
The company put in a sober plea of its own:

1. We have had the rule for 20 years that anyone guilty of drunken driving would be fired.
2. In the past five years we have discharged three men in accordance with that rule, and none of them had the audacity to take his situation to arbitration.
3. Jones was in such bad shape that he couldn't come to work the next day. He didn't even notify the company. That deserves a penalty, too.
4. We want sober workers in our place—skilled or unskilled—that makes no difference.

Was the company: Right ☐ Wrong ☐

CHAMPION CHOP SAW

Swivel base for accurate mitering and square cutting. Capacity with 8" blade cuts through 2" x 4" stock at 90° and 2" x 3" at 45°. Has ½ H.P. Single Phase motor. Plexiglass table. Space required 16" x 23". Price complete with motor, belt, starter, and cut off saw, F.O.B. Chicago, crated. $215.00



WOODWORKER'S TOOL WORKS
224 S. JEFFERSON ST.
CHICAGO 6, ILLINOIS

What Arbitrator Harry J. Dworkin Ruled

"It is a matter of 'common law' applicable to industrial relations that what an employee does on his own time is not a subject of regulation by the employer. There may be situations where the employer's business is of so sensitive a character as to require that employees be cognizant, at all times, of the good will of the employer and his relationship with the general public, both during and after working hours. In such instances, the violation of rules governing an employee's conduct, even on the employee's own time, may be the proper basis for disciplinary action.

"There is no question but that an employer may establish reasonable rules affecting the operations of the plant and regulating the conduct of its employees. Generally such rules are designed to operate and to apply during the hours of the employment relationship. They do not customarily extend so as to regulate the conduct of an employee while off duty.

"In this case, however, Jones was engaged as a common laborer, doing hard work. The arbitrator finds it difficult to reconcile the application of the rule here. While not intending to condone the use of intoxicating beverages while operating a motor vehicle, nor to criticize the company's concern for the consequences of such conduct, a conviction for this would not necessarily affect the employee's ability to perform the duties involved in his job. The arbitrator, therefore, concludes that the violation of the rule pertaining to drunken driving would NOT afford just cause for discharge."

hpi means quality

CUT-TO-SIZE HARDWOOD PLYWOOD

The hpi seal guarantees that the plywood you use has met the rigid testing and inspection of the Hardwood Plywood Institute—30% more exacting than Commercial Standard.

• CERTIFIED AMERICAN QUALITY • HARDWOOD PLYWOOD INSTITUTE •

hpi

For more information about hardwood plywood or the Institute, write:

HARDWOOD PLYWOOD INSTITUTE
2310 South Walter Reed Drive, Arlington 6, Virginia

FAST DELIVERY
The most complete inventory of Furniture Tools.

#122-Bevel with #122-D available in high speed steel

#30 with #100-30

#203 JSR high speed steel

#600 available in high speed steel

HIGH SPEED STEEL
Most types of tools now furnished in high-speed steel for extra long tool life.

#810 also available in carbide tipped

#28 Hollow chisel with 100-28 H. C. Bit

#122 Adj. Countersink with 122-D St. Shank Drill available in high speed steel

#204 available in high speed steel

#200 available in high speed steel

#203 available in high speed steel

#400

STOCK COMPLETE
MEMPHIS, TENNESSEE
301 S. Front St.
JA 7-4443
LOS ANGELES, CALIFORNIA
4481 Firestone Blvd
LO 4-1791
EVANSVILLE, INDIANA
306 N. 7th Ave.
HA 5-9049
NEW YORK CITY
173 Lafayette St.
WA 5-0440
PHILADELPHIA, PENNA.
212 N. 11th St.
WA 2-7034
DETROIT, MICHIGAN
2309 Russell St.
WO 1-6418

WRITE FOR FREE CATALOG

FOREST CITY BIT & TOOL CO.
17th St. & 9th Ave., N.W.
Hickory, North Carolina
Phone: Diamond 5-7124

FOREST CITY

Adjustable to All Conditions . . .

Mereen-Johnson VERTICAL BAND RESAW

- Individual feed motor drive
- Double supporting column — no overhanging wheels
- 100% anti-friction bearings throughout

Mereen-Johnson Resaws have special features that make for production economies and low maintenance costs. Eight feed rolls hold the stock rigid and eliminate "stock wobble". Variable feed drive — tilts for bevel siding. V-belt drive, 1200 RPM motor.

For Bulletin No. 210B, inquire on your company letterhead to:

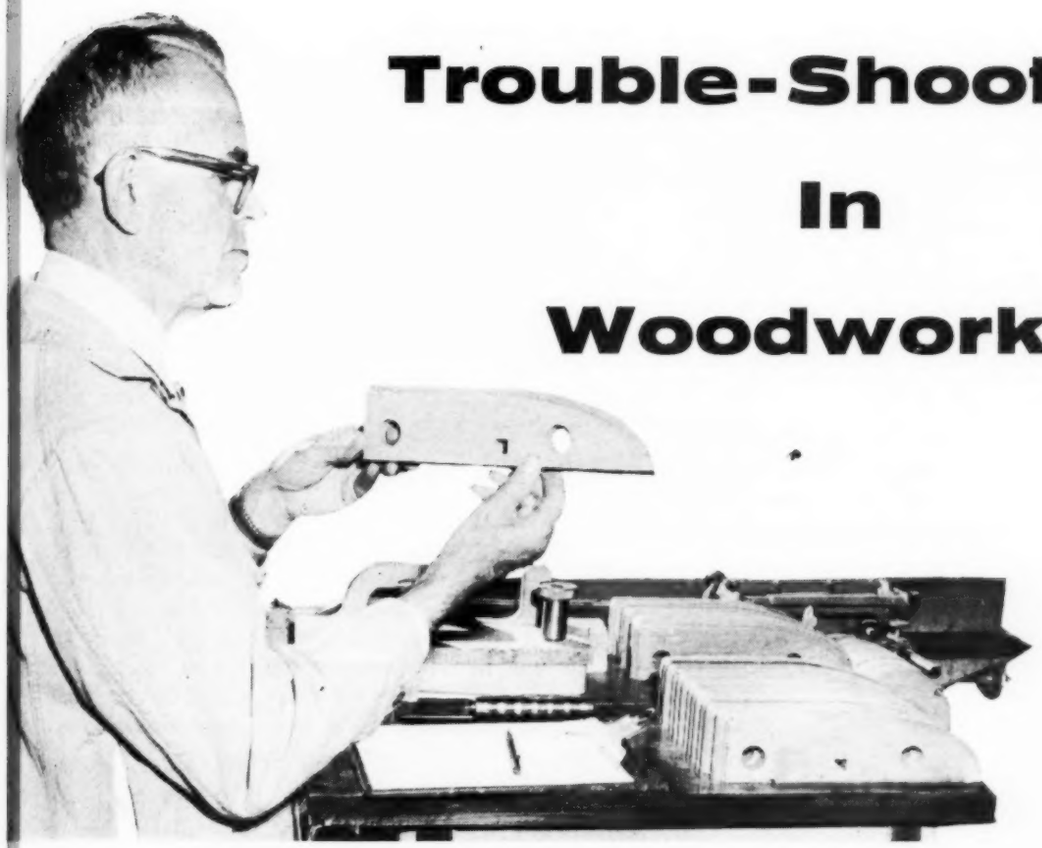
Mereen-Johnson MACHINE COMPANY

4401 LYNDALE AVENUE NORTH • MINNEAPOLIS 12, MINNESOTA

Trouble-Shooting In Woodworking

By E. M. Davis

Technologist,
Forest Products Laboratory



E. M. Davis in a woodworking shop at the U. S. Forest Products Laboratory, inspects a wood shaping for machining defects.

When something goes wrong, it is human nature to look around and try to fix the blame preferably, of course, on someone else. This is certainly true of woodworking. If the number of rejects takes a sudden jump, the front office may blame the machine man, who then blames the dry-kiln operator, who, in turn, blames the front office for buying poor lumber in the first place. This is a vicious circle if there ever was one. As a matter of fact, any one of the three or a combination of them may be responsible in a given case. This article cites a number of specific instances. Most of these instances are horrible examples that were sent to the Forest Products Laboratory with a request for information on the cause and suggestions for a cure.

Troubles in woodworking arise from the three main sources just mentioned, namely: faults in the wood itself, faulty seasoning, and faults in the machine or in its operation. Let us consider each of them separately.

Inherent Characteristics of the Wood

Standard specifications for cutting grades of both hardwoods and softwoods are concerned chiefly with such things as yield, size and quality of cuttings. Any defects that may be permitted in different grades of cuttings are spelled out in detail. The specifications, however, generally fail to deal with several other factors that may affect the practical utility of a board to a large degree. Among these are texture, density, cross grain, tension wood, case-hardening and brashness. Several of these are discussed in detail.

Effect of Density upon Machining

Machining difficulties may arise because of either extremely high or extremely low density. In turning, for example, two of our lightest hardwoods, willow and basswood, are among the poorest species because of a tendency to crush, tear, and fuzz instead of cutting smoothly. They

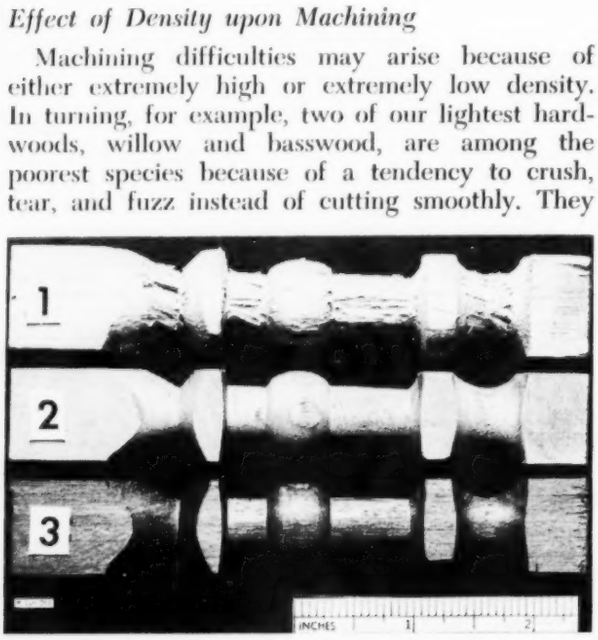


Figure 1. Turnings made from woods of widely varying density.
No. 1—Balsa, specific gravity 0.22.
No. 2—Black cherry, specific gravity 0.47.
No. 3—Haplormosia, specific gravity 0.85.

may have to be "babied" a lot to guard against breakage. They are not, however, nearly as bad in these respects as turning sample No. 1, Figure 1, which is balsa, specific gravity 0.22. That black cherry can be turned well under identical conditions is shown by sample No. 2. A specific gravity of .47 gives this wood enough backbone to stand up to the cut and places it in the great middle class as far as weight is concerned. Beyond a certain point, however, added density may be a disadvantage. A good example is haplormosia, sample No. 3, an African wood with a density of .85 as compared with .61 for our native hickory. Even if they cut smoothly, which isn't always the case, woods in this weight class are so hard that they necessarily slow down the rate of cut and accelerate the rate of tool dulling. Although special reference is made here to turning, in general, it applies to other operations as well, especially where end-grain cuts are involved.

Effects of Growth Rate upon Machining of Softwoods

Density being about equal, samples of slow-growing softwoods machine consistently better

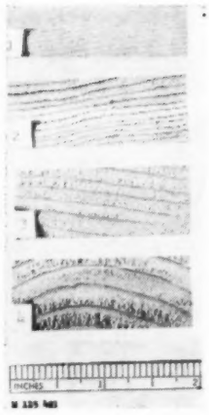


Figure 2. Shaper cuts made on the end grain of ponderosa pine of widely varying growth rates:
No. 1—20 rings per inch.
No. 2—12 rings per inch.
No. 3—7 rings per inch.
No. 4—4 rings per inch.

than fast-growing samples of the same species. End-grain cuts with the shaper of ponderosa pine are used to illustrate this in Figure 2. This is a more severe test than side-grain cuts and reflects the trends much more clearly. In ponderosa pine, many more top grade samples were obtained from types like Nos. 1 and 2 than from such types as Nos. 3 and 4. The same trend was observed in other operations involving end-grain cuts, such as turning, boring, and mortising. Similar tests with Douglas-fir yielded parallel results.

Effect of Tension Wood upon Machining

Figure 3 shows a sample of mahogany that was sent to us with a request for information on the cause of the fuzziness. The whole surface of the sample as received was like that in No. 1. Nothing was known about the moisture content of the wood when machined or the knife angle that was used. Consequently, we had to rely on the evidence of the wood itself. One thing was certain, the sample included a large amount of tension wood.

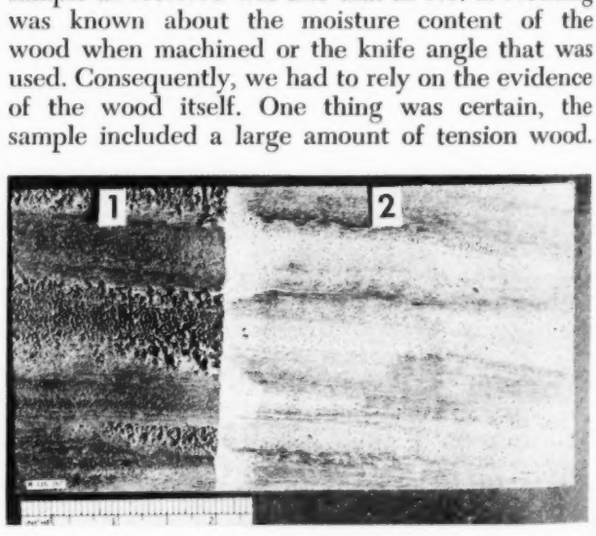


Figure 3. Sample of mahogany containing tension wood.
No. 1—Surface as originally received.
No. 2—Surface after making a cut with a sharp jointer.

This is an abnormal type of fiber that is sometimes found in many hardwood species. As a rule, it first manifests itself by an unusually fuzzy surface on the rough sawn lumber. The fuzzing tendencies persist after seasoning and often show up in planing and sanding. In some instances, it may require the use of shellac or glue sizing to stiffen the

fibers enough to permit sanding them off. Dull tools, of course, aggravate the problem. Taking a cut 1/16" deep with a sharp jointer for about two-thirds of the length of the sample, we obtained the smooth surface shown in No. 2. In this instance, sharp knives were enough to effect a cure.

Effect of Mineral Streak upon Machining

Dark streaks in hardwoods sometimes (but not always) contain crystals of some calcium compound. Because of their great hardness, such minerals often nick and dull planer knives. Figure 4 shows a sample of balsa wood containing a mineral streak, scarcely wider than a pencil line. At the left, before the knives of the cutterhead encountered the mineral streak, no evidence of nicks is visible. Immediately to the right of the mineral streak, however, a tiny ridge appears on the surface that indicates a nick in the knives caused by the hard crystals in the small mineral streak.

Effect of Cross Grain and Inadequate Number of Knife Marks per Inch upon Machining

The sample of hard maple shown in Figure 5 presents two problems; one is in the wood itself, pronounced cross grain; and one in the machining, an insufficient number of knife marks per inch.

The sample is all one piece. When it was received, the entire surface was like that of the upper half with badly chipped grain. Obviously, this sample was machined against the grain, but this situation can't always be avoided because the direction of slope sometimes reverses itself in different parts of a board. The chipping is aggravated by the fact that there are only four knife marks per inch; not nearly enough to do a good planing job with maple. Possibly the intention was to get 16 knife marks per inch, which would have made a big improvement, but failure to joint the knives resulted in one-knife work.

The lower half of the sample illustrates the surface obtained by making a jointer cut 1/16" deep for one-half of the width of the sample while cutting with the grain. Jointing the opposite side against the grain produced a trace of chipping, but not nearly as much as the four-cut-per-inch work on the original surface.

Seasoning Inadequacies

Good lumber may give poor results because of mistakes in drying. In most of the United States, wood for interior use comes to an equilibrium moisture content of 6-8%. Theoretically, at least, lumber for furniture and millwork is dried accordingly. In actual practice, however, it isn't always as dry as might be desired, and this may cause poor machining. On the other hand, wood that is dry enough may be badly checked, honeycombed, or case-hardened because of improper kiln operation.

Either insufficient drying or improper drying may cause good lumber to arrive at the machine in such condition that good results from machining are impossible.

Effect of Insufficient Drying

The wood in Figure 6 is Sitka spruce, a species that fuzzes about as much as any native softwood if it is planed at a high moisture content. This sample was first soaked in water for several days, and then run over a sharp jointer. No. 1 of Figure 6 is typical of the badly torn and fuzzed surface that resulted. The sample was then conditioned to 8% moisture content, and the No. 2 cut was made with a sharp jointer. Since all other factors were controlled, the difference in results can be attributed to the moisture factor. The lighter and softer woods are in general the ones most subject to this trouble.

Effect of Heart Center and Shrinkage

Part of a turning which was sent to the Forest Product Laboratory for our comment and suggestions is shown in Figure 7. The wood is magnolia, which has average good-turning properties. Pith showed in almost the exact center of the ends, and such "heart center" squares often check in drying as this one did. Evidently this square was turned at too high a moisture content and shrank afterwards, because certainly no one would bother to turn a square that was already so bady checked as to be worthless. Moisture content also effects the smoothness of cut, and on this basis alone, too much moisture would be suspected. Two things are at fault here, the use of a trouble-prone heart center square and the failure to dry the material adequately.

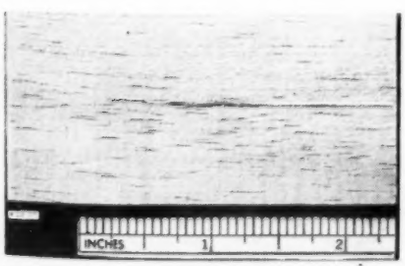


Figure 4. Sample of balsa showing evidence of a nick in the jointer knives caused by the small mineral streak in the center of the sample.

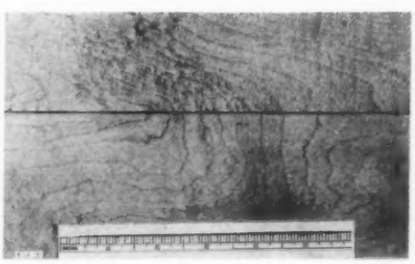


Figure 5. Poor planing in cross-grained hard maple. Upper half of sample is result of planing against the grain with only four knife marks per inch. Lower half is result of planing with the grain at about 20 knife marks per inch.

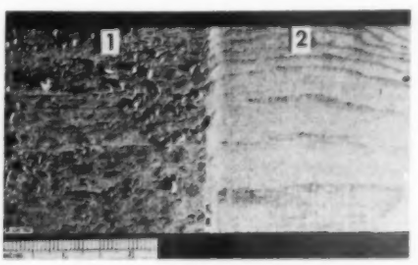


Figure 6. Sample of Stika spruce.
No. 1—Planed at a high moisture content.
No. 2—Planed after drying to 8% moisture content.

Figure 7. Sample of magnolia that was turned at too high a moisture content and afterward shrank and checked.

Improper Seasoning

The purchaser of the material shown in Figure 8 (a furniture manufacturer) returned them to the producer with a complaint that the lumber was no good. The wood, ponderosa pine, was kiln dried at the source while the hardboard facing was applied by the purchaser. Specifically, the complaint was that curved edge, No. 1, tore out badly in shaping. Examination disclosed that the tearouts always occurred at points where interior checks reached the surface. Nos. 2 and 3 show these checks as they appear on the side and end surfaces respectively. Since ponderosa pine normally has good machining properties, the interior checks are believed to be essentially responsible for this trouble. On the other hand, something seriously wrong in the kiln or its operation is held to be primarily responsible for the interior checks because ponderosa pine is one of the softwoods easiest to kiln dry.

Machine Shortcomings

Assuming that the source of trouble has been narrowed down to the actual cutting, two possibilities still remain: one mechanical and one human. Mechanically, the machine may fail to function properly because of badly worn parts, or because the cutting tools are too dull to do a good job. Humanly, a perfectly good machine may do a poor job because the operator lacks the know-how to adjust and to run it properly.

To judge from the machining problems submitted to the Forest Products Laboratory from time to time, dullness of cutting tools is the most common source of trouble in the machine itself.

Effect of a Loose Bearing in Drum Sanding

The sample of Philippine mahogany plywood shown in Figure 9 was sent to us with a letter inquiring about the cause of the ripple marks on the surface. Faint as they may appear, they are conspicuous enough to be objectionable in high-class work. The application of clear finish would make them stand out even more. We found nothing wrong in either the wood itself or in the drying.

The direction of the ripples at right angles to the grain showed that the sample had been put through the customary drum sander. Their regular spacing at ¼" intervals suggested revolution marks, that is, marks occurring once in every revolution of the drum. Drum sanders running at typical speed and feed rates (say 1200 r.p.m. for the last drum and 24 f.p.m.) would make four drum revolutions per inch of feed. This checked with the ripples on the sample which measured four per inch. Our surmise of a badly worn bearing or bearings proved to be correct, and once this condition was remedied, the ripples vanished.

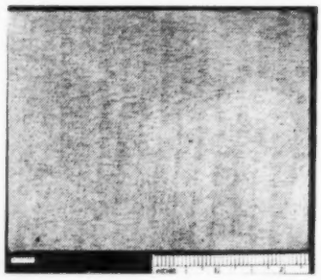


Figure 9. Sample of sanded Philippine mahogany plywood that shows revolution marks on the surface.

Effect of Dull Saws

Trouble in sawing may result from nothing more complicated than the dullness of cutting edges. The sawcut in the center of No. 1 in Figure 10 marks the place where the teeth of a bandsaw emerged in resawing. The lower edge of No. 1 shows the same splintering effect produced by a bandsaw in ripping. This saw certainly is dull, but too fast a feed under the conditions may be a second contributing factor. The trouble is also aggravated by cross grain, some of the splits extending to a depth of ⅛ inch or more. Resawed surfaces may vary markedly in smoothness and trueness of cut, depending upon machining factors. This is illustrated by the work of the same dull bandsaw in No. 2 as compared with the work of a sharp one, No. 3. The wood in all instances is yellow birch.

Effect of Glue Lines on Dulling of Tools

A common effect of glue lines on high-speed tools is illustrated in Figure 11. Part of a ½" router

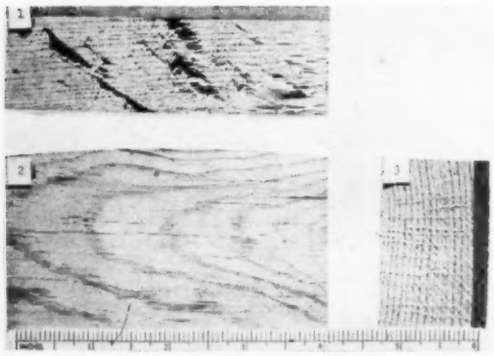


Figure 8. Sample of improperly dried ponderosa pine.
No. 1—Edge view showing torn grain in shaping.
No. 2—Side view showing numerous checks.
No. 3—End view showing penetration of checks.

for

Smoother

Cleaner

Faster

Cutting

AND A LIFETIME OF TROUBLE-FREE SERVICE

buy

TANNEWITZ

HIGH SPEED BAND SAWS

The absolute precision with which these machines are built allows them to deliver over 12,000 feet of saw-blade travel per minute entirely without vibration. That means smoother, cleaner cuts requiring less cleanup; faster cuts, for at this speed the blade slides thru stock 12" or more thick as easy as butter. Traditional Tannewitz quality — the highest in the industry — and numerous patented features assure maximum convenience of operation and minimum maintenance. They're the best by any test — by far the cheapest in the long run. Write for "Band Saw Bulletins" and judge for yourself.

BUILT BY SAWING MACHINERY SPECIALISTS ☎ GL 6-1729

THE TANNEWITZ WORKS, Grand Rapids, Mich.

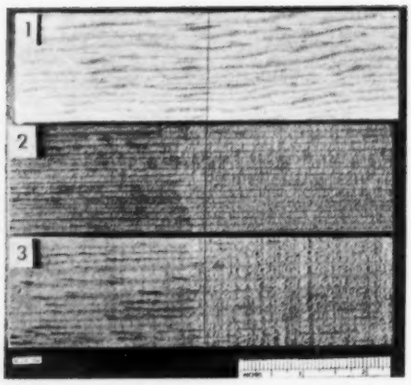


Fig. 10

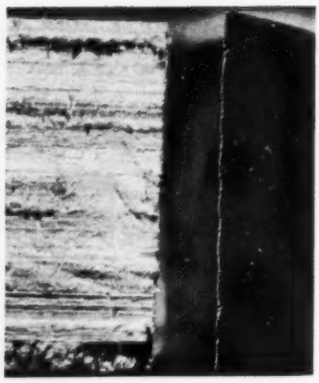


Fig. 11

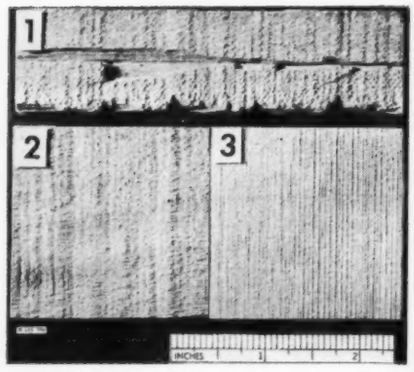


Fig. 12

Figure 10. The resawing of yellow birch with the bandsaw (far left).
No. 1 Edge of the board where the saw teeth emerged.
No. 2 Resawed surface as left by a dull bandsaw.
No. 3 Resawed surface as left by a sharp bandsaw.

Figure 11. Cutting edge of a router bit, left, as dulled by glue lines in gum plywood, right.

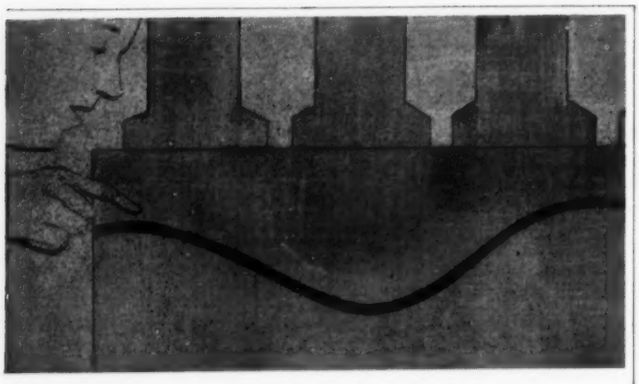
Figure 12. Ponderosa pine samples machined under different conditions. (photo at right). Right hand side of each sample moistened with water after planing.
No. 1 Machined with freshly sharpened knives.
No. 2 Machined with freshly lightly jointed knives.
No. 3 Machined with very dull knives.

bit is shown at the left together with a small piece of the ¾" gum plywood of nine-ply thickness that caused the trouble. As would be expected with such a dull edge, the machine work is poor. Note that the deeper depressions in the profile of the cutting edge correspond with the glue line in the plywood. Note also, the sharp contrast between the condition of the dulled portion of the cutting edge and the upper or unused portion.

Carbide-tipped tools are better able to withstand the abrasive action of the hard glue lines and, on a production basis at least, are more suitable tools for jobs of this type.

Effect of Jointing and Dull Knives upon Quality of Planing

A sample that appears to have a satisfactory surface as it comes from the planer may develop pronounced raised grain later, depending upon the condition of the knife edges and upon subsequent



PLYWOOD WITH A PERMANENT WAVE

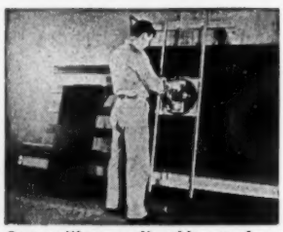
It's there to stay, thanks to our electronic High Frequency Press. We specialize in forming plywood to required specifications. Stock or special order, any size, shape or form—if it's curved plywood you need, call us.

Complete line of plywood products

- Serpentine Fronts
- Laminated Curved Panels
- Core Banding—any construction
- Lumber Cores for Plywood
- Edge Banding—Veneer or Plastic
- Plastic Faced Panels
- Dimension Plywood—Fancy Faced

HENRY COUNTY PLYWOOD

RIDGEWAY, VIRGINIA • Phone MARTINSVILLE, VA., ME. 2-3035



Cross-cutting a 4' wide panel on Model 483

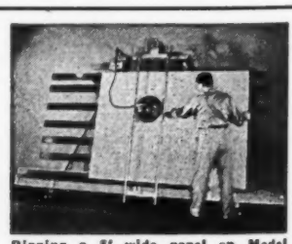
CROSS CUTS

Both cross cuts and rip cuts may be made without removing panel from machine. Vertical and horizontal scales for selection cuts. A one man operation!

Cross Cut Or Rip Cut Panels Of Wood, Plastic, Aluminum, Plastic Laminates, Hardboard,
and other materials quickly, accurately with the

Bennett PANEL 2 WAY SAW TRADE MARK

WRITE FOR PRICES AND LITERATURE
RICHARD C. BENNETT MFG. CO.
BOX 332 LACEYVILLE, PENNA.



Ripping a 5' wide panel on Model 583

RIP CUTS

In Use Coast-to-Coast by

- RETAIL LUMBER YARDS
- CABINET AND WOODWORKING SHOPS
- SASH AND DOOR MILLS
- BUILDING CONTRACTORS
- CRATING AND SHIPPING DEPTS.

moisture pickup. All three samples in Figure 12 are ponderosa pine. In all cases, the left half of each sample shows the surface as it came from the planer. The right half of each sample shows the surface after being thoroughly moistened with water and allowed to dry.

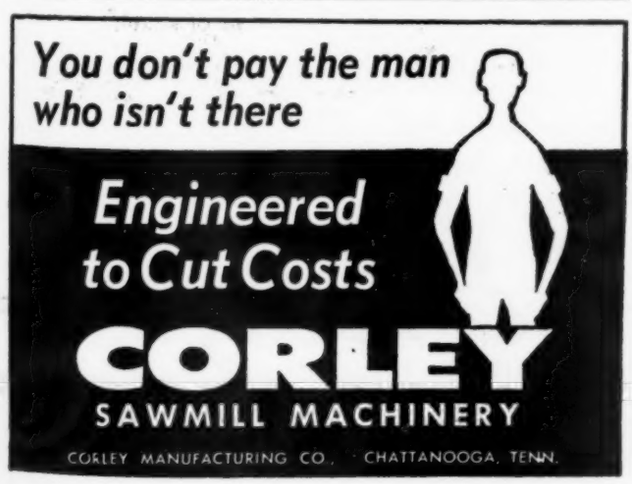
Sample No. 1 was machined with freshly sharpened knives that were jointed just enough to disclose a barely perceptible land. The application of water made no noticeable difference in the appearance of the two halves. These knives were cutting and doing nothing else.

Sample No. 2 was machined with knives that were sharp, but had a land about one-thirty-second of an inch wide produced by repeated jointings. The left half looks good, but the application of water to the right half brought out noticeable raised grain, revealing that there was some compression in addition to cutting action.

The knives that machined sample No. 3 not only had a land one-thirty-second of an inch wide, but also had edges that had been deliberately dulled with garnet paper. In this case, the contrast between the two halves is very marked. It is evident that the knives were scraping, pounding, and compressing the softer portions of the surface wood rather than cutting it. With the application of water, the compressed wood expanded, producing pronounced raised grain in a matter of minutes. The apparently passable finish in the left half of No. 3 is a delusion, because it is a glazed surface with latent raised grain. This simple water test is a very practical way of proving just how good a planed surface really is.

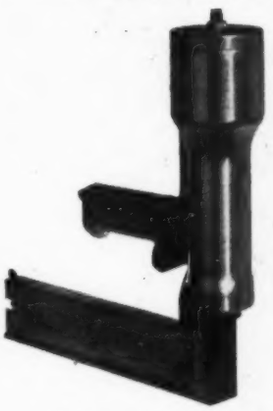
This article, and the work conducted at the Laboratory, has attempted to show that most woodworking difficulties arise from three main sources: something wrong with the wood; faulty seasoning; improper machining through mechanical difficulty or the inefficiency of the operator. The next time you have trouble, check out each one of these possibilities in a careful, scientific manner.

This article is from a paper published by the Forest Products Laboratory. Hitchcock's WOOD WORKING Digest was offered exclusive publication and we are pleased to bring so helpful an article to our readers.


You don't pay the man who isn't there
Engineered to Cut Costs
CORLEY
SAWMILL MACHINERY
CORLEY MANUFACTURING CO. CHATTANOOGA, TENN.

INCREASES PRODUCTION 150%

Assembling furniture frame with Power-Line ARN-3B Nailer



POWER-LINE ARN-3B NAILER

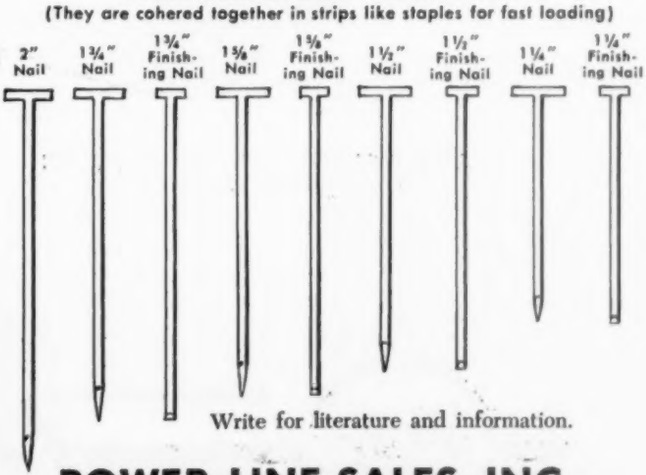
drives 2" nails on low air pressure

Get increased output, sharply reduced labor costs — with this remarkable new portable tool for woodworking operations. The new improved model has a driving power 20% to 25% greater than previous models. It drives 2" nails at a rate up to 160 nails per minute in hard or soft woods — without recoil. The adjustable latch mechanism enables you to drive nails to any desired depth.

The ARN-2BF Finishing Nailer (a modified version of the ARN-3B) offers to cabinet, furniture and sash and door manufacturers, a tool which can triple production through high speed nailing of face frames, shelves, molding, corner blocks, etc. Power-Line finishing nails are countersunk automatically and leave a nail hole that is easy to putty. There are no hammer marks to mar the surface.

NAILS ARE SHOWN ACTUAL SIZE

(They are cohered together in strips like staples for fast loading)



Write for literature and information.

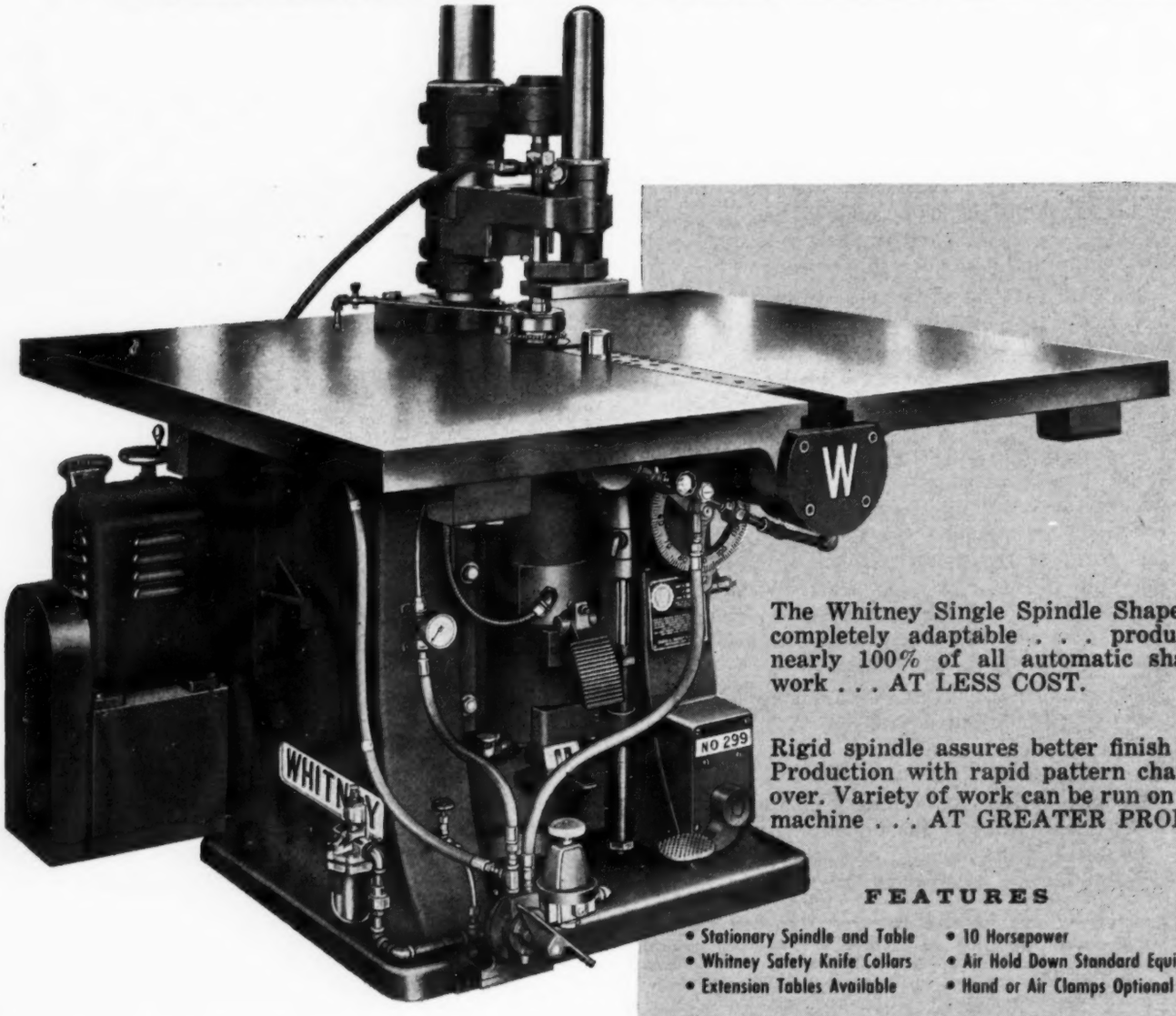
POWER-LINE SALES, INC.

540 Monterey Pass Road, Monterey Park, Calif.
Branch plant: High Point, N.C. • Sales representatives in principal cities (See Yellow Pages of phone directory)

Stapling Machines • Nailing Machines • Hog Ring Machines

Versatile AUTOMATIC SHAPER

THE ANSWER TO YOUR SHAPER NEEDS



AUTOMATIC SINGLE SPINDLE SHAPER No. 299

The Whitney Single Spindle Shaper is completely adaptable . . . producing nearly 100% of all automatic shaper work . . . AT LESS COST.

Rigid spindle assures better finish and Production with rapid pattern change-over. Variety of work can be run on this machine . . . AT GREATER PROFIT.

FEATURES

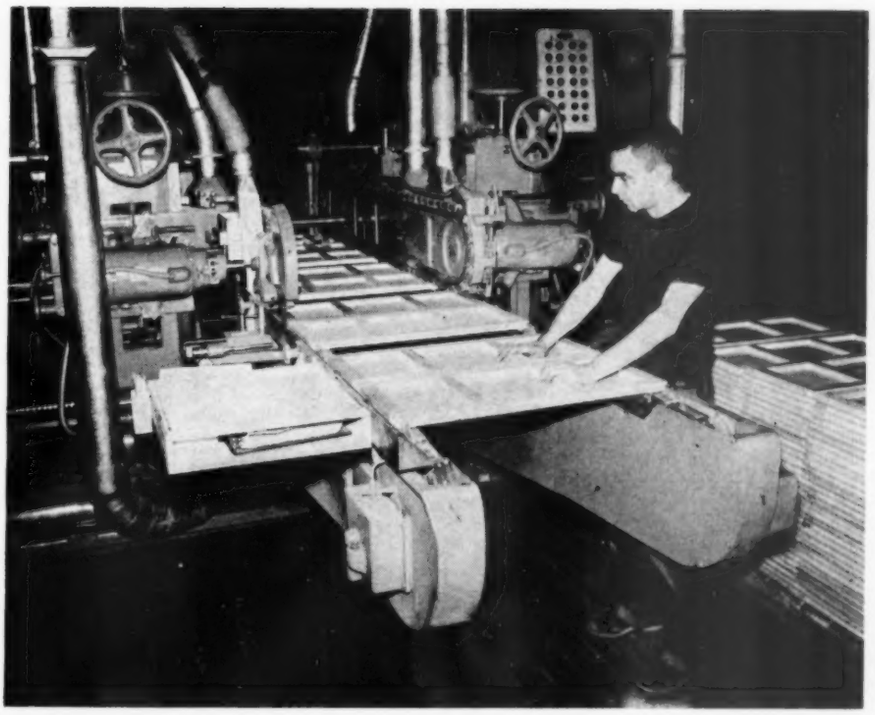
- Stationary Spindle and Table
- Whitney Safety Knife Collars
- Extension Tables Available
- 10 Horsepower
- Air Hold Down Standard Equipment
- Hand or Air Clamps Optional

Whitney builds a complete line of shapers, single and double spindle — automatic and hand operated — 2 HP to 18 HP. Whitney has the right model to meet your needs. Write for detailed information today.

WOODWORKING MACHINERY MANUFACTURERS' ASSOCIATION WMMA

Whitney

BAXTER D. WHITNEY & SON, INC.
GREENSBORO, N. C., U. S. A.



Looking at infeed end of Greenlee double-end tenoner machining lock joints in cabinet and panels of framed-up type at the plant of Morgan Company, Oshkosh, Wisconsin. This firm has found it possible to hold to a tolerance of .008" on these lock joints, consistently.

Machining Framed-Up Assemblies

Two different types of machining are used on framed-up components: machining individual parts and then machining the entire sub-assembly as a part.

■ Various cabinets, store fixtures and furniture pieces, made in planing mills, furniture plants, and other woodworking establishments, contain different sub-assemblies often called frames, or framed-up components. Two different types of machining are used on such components. First is machining of individual parts used to make the framed assemblies. Secondly, after they have been glued and clamped together, further machining is necessary to prepare these parts for the cabinet, piece of furniture, or store fixture.

A small proportion of frames, made up of moldings or other stock of irregular cross-section, must be joined at the corners by mitering. In some instances, necessary double-end mitering can be advantageously accomplished at a double end tenoner; in others, where material is quite wide, a special mitering machine may be indicated. Clamp nails are used for joining a considerable proportion of mitered frames.

The great preponderance of framed-up assemblies, however, are of flat stock. They incorporate stiles and rails (and sometimes mullions), which may be joined together either by the doweling process, or by mortising and tenoning. The doweling method is much used in large furniture plants, where equipment employed makes the method economically applicable. In addition to automatic dowel turning machines, there are dowel cutting and pointing machines which also speed dowel production. Sometimes, special automatic variety lathes are used for producing dowel pins of spirally-grooved type, pointing them in the same operation.

Other Machines Used In Dowel Joinery

In conjunction with these processes, automatic sawing, boring, and chucking machines are quite widely employed. These units will trim both ends of rails square (or at any pre-determined miter where frames other than square are involved) and will bore two or more dowel holes in each rail end, normal to the sawed face. Add to this suitable stile-boring machines, plus automatic gluing and dowel driving machines, and necessary equipment for making framed-up assemblies of dowel-joint type is complete.

Those who understand the principle of the automatic variety lathe know that when such a machine is particularly designed for dowel-pin production, its use may be fully as valid from the production standpoint as the dowel-production method which involves employment of an automatic dowel turning machine plus a cutter and pointer. By the lathe method, turning, grooving, pointing and cutting off are all handled as a single operation. Some of these units have produced anywhere from 15 to 20 thousand ready-to-use dowels in one working day. At times when the machine is not needed for dowel production (should there be such times) it can be employed for making knob-type drawer pulls, screw-hole plugs, etc.

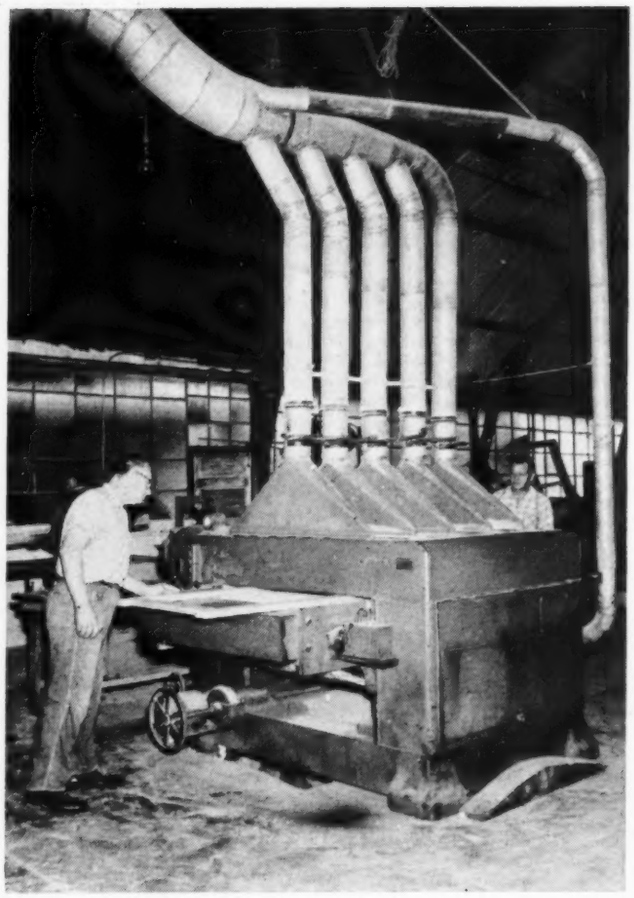
Mortising and tenoning joinery is employed in many plants; either a chain-saw or hollow-chisel mortiser

We Specialize in...

• streamline white oak
• american walnut
• cherry

Veneers
and
Lumber

AMOS-THOMPSON
CORP.
Edinburg, Indiana



Operational view of Solem four-drum endless bed sander in a sash and door plant, smoothing and bringing all joints flush on an order of special screen door frames. Once these frames have been suitably smoothed, the job will be complete except for application of wire cloth.

may be used. The hollow-chisel mortiser is much preferred from the standpoint of accuracy; this is particularly true where the operator works to layout marks on edges of material. Hollow chisels in sizes from ⅜" upward are usually made square in section all the way from the cutting end up to the shank.

Additional Strength At Chisel Shank

All four sides of such a chisel flare out into a square shoulder just below the shank. This shoulder is set up against the face of the split chisel bushing in the machine chisel ram. Although it does not appear so to the eye, the chisel is just slightly relieved through its cutting length, being made a *trifle* larger at the cutting end, to neutralize any wedging in the cut. Thus chisel removal is facilitated after each cutting stroke.

It is possible to obtain ¼" and 5/16" hollow chisels; their use is occasionally convenient for mortising material ¾" thick or less. They should be employed only where a larger chisel cannot be used consistently. These ¼" and 5/16" chisels often have their sections square for only a part of the way from their cutting end to the shank. At some distance below the shank, they flare out on two of their four sides, providing opposed and reinforcing masses of metal, to strengthen them at the shank.

Chisels from ⅜" upward stand up better, and allow

mortising to proceed at a faster rate. This is true because mortises are made by repetitive strokes of the square chisel. Fewer strokes are required with a ⅜" tool than with a 5/16" or ¼" chisel.

Drum Sanding Framed-Up Components

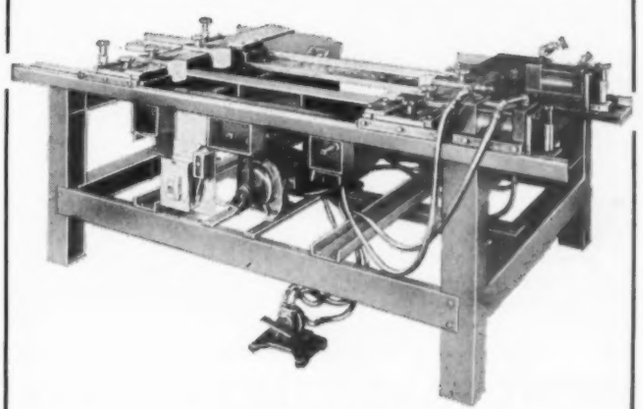
Whether framed-up assemblies are made by boring and doweling or by the mortising and tenoning method, they take many forms in various products. Some flat framed-up assemblies, as for instance sash and doors, are complete without being further assembled into a cabinet or piece of furniture. Whether or not that is true, it is essential to sand framed-up assemblies in such a way as to bring all joints flush, providing smooth surfaces.

The time-honored method of doing this is to route them through a drum sander. Afterward, they may or may not be taken to a belt sander for final polishing, depending on the type of framed-up assembly involved. Sash and screen doors, for instance, are often considered complete so far as smoothing is concerned, after they have been put through a modern drum sander.

Little or no trouble is experienced in running framed-up assemblies through a drum sander, with a single exception. That is where two-light storm sash (or full-length screens with a single dividing bar across their center height) are processed. Trouble is sometimes experienced with these, if they are run *straight* through a roll-feed machine, from the standpoint that when a sander drum engages a narrow bar

UP PRODUCTION—
Cut Costs!
PLANER KNIVES
MOULDER KNIVES
SHAPER STEEL
JOINTER KNIVES
WITH
Supreme
KNIVES
You step up your production with Supreme Knives... milled to exact specifications... to insure a perfect fit in the machine. Made from the correct alloy steel for your particular job, Supreme Knives work harder... longer. The expense of early re-sharpening and replacing is eliminated. We design and make Special Knives to your requirements.
VENEER KNIVES
SHEAR KNIVES
CIRCULAR KNIVES
WRITE TODAY FOR YOUR COPY OF THE SUPREME CATALOG NO. E
THE SAW & KNIFE SPECIALTY CO., INC.
6526 CARNEGIE AVENUE • CLEVELAND 3, OHIO
SEND US YOUR CARBIDE-TIPPED KNIVES CUTTERS ROUTER BITS
We will promptly repair, retip and sharpen your Carbide-Tipped tools and get them back to you without delay. Skilled workmen and precision equipment insure fast service and complete satisfaction in restoring cutting efficiency.
PROMPT DEPENDABLE SERVICE

The *New*
LANCASTER No. 130-E
Sash and Door
Assembly Machine



(patent pending)

FEATURES:

★ Fast Set-up (from 18"x18" Minimum to 54"x60" Maximum)

★ Easy Access to Work for One or Two Operators

★ Power Set-up for Main Jaws

★ Spring-loaded Stop Pin Set-up for Auxiliary Jaws and Slides

★ Quick-change Dogs provided for Internal Rails and Cross Bars

★ Adequate Power and Strength

★ Equalized Pressure

Other sizes available—Advise your requirements

J. M. LANCASTER, INC.

41 Years of Practical Know-how in Building Assembly Machinery

P.O. Box 2462, Dept. W
2915-2917 Freeman Mill Rd., Greensboro, N.C.
BRoadway 5-6333

Write—Wire—Call—Visit

FAMOWOOD... *the AMAZING*...

ALL-PURPOSE PLASTIC for wood finishes!

Applies like putty... Sticks like glue!

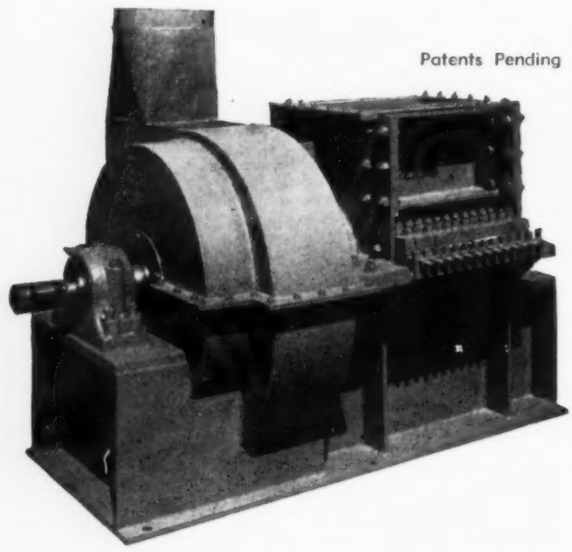
FAMOWOOD is the answer . . . where wood finishes are important. Simple to use . . . efficient, lasting, time-saving, when filling wood cracks, gouges, nail and screw holes or correcting defects. CAN BE USED UNDER FIBERGLASS. Dries quickly, doesn't shrink. Stays put under adverse conditions. FAMOWOOD sands easily, does not gum up sander. Takes spirit dye stains freely. Waterproof and weatherproof when properly applied. Ready to use—"right out of the can." Fifteen matching colors... with amazing matchless wood finishes.

USED BY... FURNITURE MFGS. • SASH AND DOOR MFGS. • CABINET MAKERS • CONTRACTORS • BOAT BUILDERS PAINTERS • AIRCRAFT PLANTS • PATTERN SHOPS • HOME BUILDERS • ALL WOOD PRODUCTS

FAMOWOOD descriptive literature and price list on request.
Distributor & Dealer inquiries invited, write Dept. 737

BEVERLY MANUFACTURING COMPANY
9118 SOUTH MAIN STREET • LOS ANGELES 3, CALIF.
Manufacturers of . . . FAMOWOOD • FAMOGLAZE • FAMOSOLVENT

Patents Pending



Eats Up Everything

. . . including Pine, Oak, Gum, Hickory, Elm, Wet Veneer, Round-up and Sandy, Wet, Stringy Bark, Conveyor fed—no attendant required. Positively protected from major damage by tramp steel. All connections locked—nothing to shake loose. Maintenance costs unbelievably low.

WRITE FOR BULLETIN AND DETAILS

JACKSONVILLE BLOW PIPE CO.

ALSO MONTGOMERY'S BLOW-RITE MATERIAL-HANDLING BLOWERS MONTGOMERY BLOW-RITE DUST-COLLECTING SYSTEMS AND MONTGOMERY'S "BURN-RITE" INCINERATORS

P.O. Box 3687 **JACKSONVILLE, FLORIDA**

of this type over its entire length simultaneously, a strong fluttering action sometimes results, building up to a point where the bar is broken.

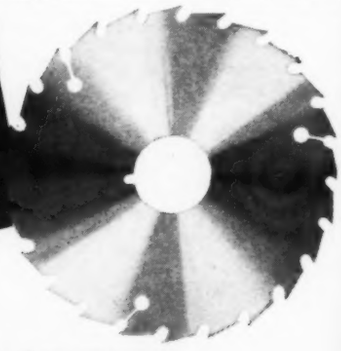
It is therefore wise to run framed-up assemblies of this particular type through a drum sander in a position as strongly diagonal as width of the frame and relative width of the sander will allow. In any case, an endless bed sander handles this type of work with far less risk. The non-slip surface of rubber pads on the endless bed largely eliminates any such fluttering. Where bars are wider, they themselves incorporate sufficient strength to resist any fluttering action.

Several Assemblies In Single Opening

Sometimes several framed-up assemblies, as for instance doors or sash, are used together to fill a single opening. In such instances, joining edges are often rabbeted together to form a suitable windbreak, or to prevent light from showing through the joints. In such a case, a layout is usually made on a rod, showing a horizontal cross-section, with the meeting rabbets drawn in.

Assuming the meeting rabbets will be ½" deep, ½" of solid material will be lost at each joint in final machining of the framed-up assemblies. Assuming four such assemblies are placed in a single opening, there will be three rabbeted joints. Therefore, the four framed-up assemblies must be preliminarily made so that (taken in the aggregate) they will incorporate 1½" excess width, plus an additional 1" excess width to allow for jointing approximately ⅛" from each of the 8 edges. Generally, such a job is encountered on

CUSTOM-BUILT SAWS

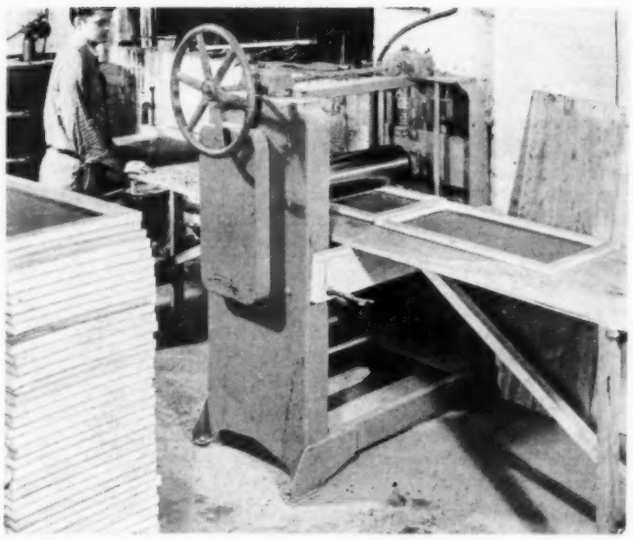


...for the INDEPENDENT *Carbide Tipper*

1 Crafted from Jessop No. 139B Chrome-Nickel Steel
2 Checked for .003 or less static run-out
3 Custom-built; no standard stock
4 Precision tensioned
5 Peerless does NO carbide tipping
6 Crafted by specialists
7 Polish - High Finish - Unsurpassed

Peerless begins manufacture with the recognized top grade chrome-nickel steel. Peerless custom crafts every saw to the customer's specifications; we maintain no stock items. Saws are ground to decimal dimensions, have uniform teeth, are round and balanced with positive flatness. The Peerless tension factor is unique. EVERY SAW IS CHECKED FOR .003 OR LESS STATIC RUN-OUT. Beginning with the best available material, every step of our production process is performed by saw specialists. At Peerless, inspection is a matter of personal pride. Make us prove it—ask for details.

THE *Peerless* SAW COMPANY
571 S. THIRD ST. • COLUMBUS 15, OHIO



Here is seen a small Black Brothers rotary press at work in a furniture manufacturing plant, combining hardboard panels with preliminarily-assembled and glue-spread frames. In the left background, a notched registration guide is fastened rigidly to the table with a carriage clamp. This is the infeed side. The notch in the guide is employed for quick, accurate registration of the frame with the hardboard panel.

custom work, and may be handled at the hand-feed jointer and hand-feed shaper in combination.

Framed-up assemblies occasionally receive glass, and are rabbeted for that purpose on the inner edge of each stile and rail before assembly. Other times, stiles and rails to be used for paneled ends, paneled doors, etc., will be grooved or plowed on their inner edges before assembly. Various cases also exist where so-called panel-on-frame assembly is used. Here a piece of plywood or hardboard may be flat glued to one side of the frame, after the frame has been assembled.

This method is often used in making up dust-panel frames. Methods used for gluing the frames to the panels vary. One highly efficient method consists in spreading glue on one side of the framed-up assemblies, laying panels of preliminarily-dimensioned hardboard on them in proper registration, and running both panel and frame through a rotary press for combining.

Framed-Up Assemblies Machined At Tenoner

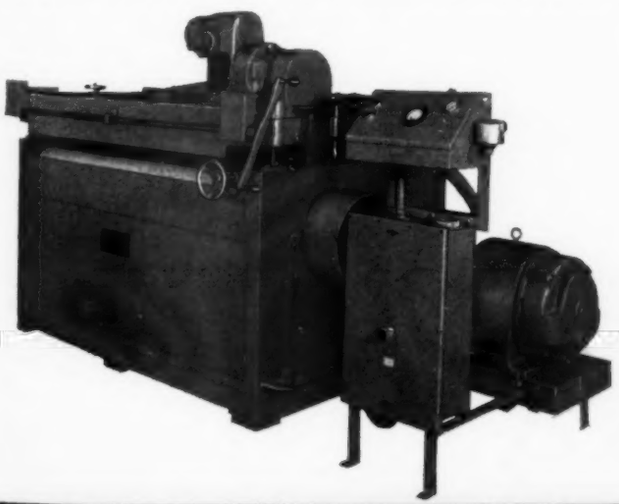
Framed-up components destined to function as part of the outer enclosure of cabinets or furniture pieces are often machined with greater care than dust-panel frames and similar work, because all joints are in view in the finished job. Where such work is handled in volume, the double-end tenoner provides means for various types of edge treatment. Since these machines have two saws at the infeed, they readily cut such framed-up components first to net length and then to net width at two separate passes through the machine.

Where cabinets or furniture pieces are to receive plywood backs, back edges of end panels are often rabbeted. This allows plywood panel backs to be set in so their raw edges are hidden. In some instances a double end tenoner is used for machining lock joints. The tenoner performs well, regardless of the fact that close tolerances must be held. □

PRECISION is the word for it!

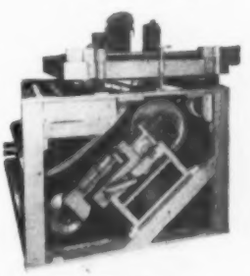
A polisher and sander designed for precision accuracy with compact construction.

Only the New Sander and Polisher offers you all of these outstanding features.



1) Independent top frame for precision pressure and stock size adjustment.
2) Three rubber covered feed rolls instead of one.
3) Feed rate of 110 FPM.
4) Automatic belt tracking device.
5) Automatic belt oscillation.
6) Adjustable steel feed tables.
7) Efficient heavy duty dust collecting system.

You would expect to pay a high price for such a quality machine. Yet the Model 50-103 (50" x 103" Belt) can be yours at surprisingly low cost. Write for details.



These illustrations show easy belt access.

New Sanders and Polishers Corporation

3545-51 S. Morgan Street Chicago 9, Illinois

LAfayette 3-8900

Available Literature

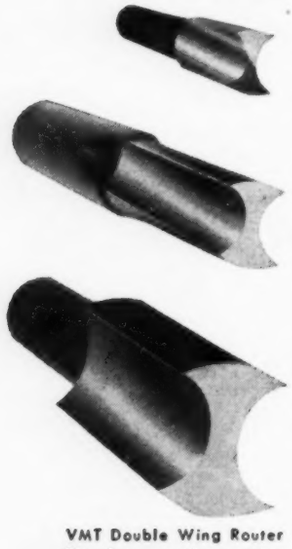
Keep Informed With Up-to-date Literature. Write Directly to These Suppliers, or Use the Reader's Service Card Inside the Back Cover

Roddiscraft Glue and Panels

A number of colorful and informative brochures are currently available from Roddis Plywood Corporation, Marshfield, Wisconsin. A handy guide to application of Roddiscraft glues lists and describes adhesives in five different categories as well as all purpose weather proof contact cement, plastic urea resin, and casein besides descriptions inside the application chart, which itemize minimum temperature proportions for mixing, minimum setting time, degree of water resistance, recommended uses and available sizes for each. A second folder, colorfully illustrated, describes craftwall prefinished natural wood paneling. A third folder describes Roddiscraft texture paneling for residential, commercial and institutional applications and lists the six texture patterns and offers attractive illustrations to exemplify an application of each. A fourth item, an eight-page brochure, gets down to the brass tacks of "How to Install Craftwall Factory Finished Paneling." The material gives details of how to do it including full instructions and line drawings comprehensible even to the inexperienced home craftsman for applying the material in new construction over plaster and masonry walls.

Use postpaid card. Circle No. 3

6 Reasons Why VMT Router Bits Are Different



1. Specially designed high cutting lip—low cutting resistance
2. Extra large clearance angle—permitting chips to fly clear of wood
3. Sharpened flute and individually honed cutting edges makes bits ready to cut when received
4. Free action of cutting edge — assures smoother work
5. Salt bath process insures uniform hardness from center of bit to surface and maintains precision accuracy
6. High tensile and transversal strength add up to lasting, accurate performance

VMT Double Wing Router Bits for smoother cutting

ALWAYS LOOK FOR THE ROUTER BIT WITH THE BLACK SHANK

Complete line of standard sizes VMT Router Bits carried in stock

- High Speed Single Wing
- High Speed Double Wing
- Double End High Speed Single Wing
- Double End High Speed Double Wing
- Carbide Tipped Single Wing
- Carbide Tipped Double Wing

When ordering, specify stock number or specify dia. of cut, dia. of shank, length of cut, length of shank and number of cutting edges. Send for free catalog "Precision Made Cutting Tools for the Woodworking Industry"

Virginia MACHINE TOOL CO.
BASSETT, VIRGINIA

Precision Made Tools For The Woodworking Industry—Standard or Milled To Pattern

Wax Finishing

S. C. Johnson & Son, Inc., of Racine, Wisconsin offers a number of booklets on wax finishing. One is a discussion of finish fade-out with an explanation of what fade-out is; why it occurs and how to overcome it with the all wax method of finishing. Detailed illustrations and instructions are given to explain the complete process of Johnson's wax method. A number of more specialized folders are offered in the Johnson series "How To Get Best Results." Each of these describes a particular product; lists the advantages and fully explains the step by step application of the product.

Use postpaid card. Circle No. 4

Automatic Nailing

Methods for saving money by means of automatic production nailing is the subject of this catalog from Auto-Nailer, 267 Marietta Street, N. W., Atlanta 13, Georgia. The catalog not only lists descriptive material and specifications on various models of automatic nailing machines but it also gives a long list of users with typical applications itemized and a suggestion list in which you may find a job on which automatic nailing can help you. This list includes many items under headings such as wooden containers, furniture subassemblies, structural nailing, toys, electrically operated products, and a long list of miscellaneous items. The back cover explains how Auto-Nailer's free engineering service will survey your fastening problems, analyze those which can be interpreted as nailing problems and then furnish you with a complete engineering report and a production specimen of your nailed product.

Use postpaid card. Circle No. 5

"Our Daddy is a Lumberman"

This intriguing 24-page hard cover booklet done up in story book style with beautifully colored illustrations showing logging operations, mill, trucks, wholesaler, forest fire, retail lumber yard, uses of wood products and other pertinent functions relating to the lumber industry will be available in September. The announcement comes from Wallace E. Kennedy of George W. Kennedy and Sons, P. O. 815, Fresno 12, California on behalf of the wood promotion committee of the San Joaquin Valley Hoo Hoo Club No. 31. Every one interested in the nationwide wood promotion program will be particularly impressed by the idea of this interpretation of "Promote Wood Products Through our Children" project.

Use postpaid card. Circle No. 6

Router Manual

A 44-page booklet entitled Black and Decker Router Manual listed at .50¢ a copy is written to guide the user of

Black and Decker routers in getting the most use from this versatile wood working tool. The manual is loaded with detailed descriptive material and illustrations on every phase of setting-up and planning for projects within the scope of this almost universal type of powered hand tool. While primarily designed for individual craft work there is much information in this booklet which will be of educational value to any production worker who uses a router. The manual was one of 4 such publications which recently received an award as best manual produced to guide contractors and builders in the use of manufacturers' materials.

Woodworking Machinery

A wide variety of woodworking machines is described in a 20-page catalog from Dependable Machine Company, Inc., P. O. Box 839, High Point Road, Greensboro, North Carolina and included are automatic knife grinders, balancing ways, single surfacers, hand joiner, carbide saw and cutterhead grinder, molders, molder attachments and tools, multisection presses, economy presses, shapers, gang rip-saws and exhaust fans. A general description and some specifications are given for each item. Also a numbered bulletin giving more information about the item is mentioned.

Use postpaid card. Circle No. 7

High Speed Automatic Drilling

A 12-page brochure is made available by Universal Automatic Corporation, 9545 Ainslie Street, Schiller Park, Illinois. It presents general information, specifications and engineering data on U-A's automatic machines and systems to improve production for secondary operation. Modular construction provides for multipurpose machine setups with single or multispindle operations. All of the machine functions originate in or are controlled by the compact unit called "The Brain." The literature describes the basic unit which features a combination of air advance and hydraulic feed with automatic advance dwell and return. Also included is descriptive material on special work holding fixtures and feed mechanism.

Use postpaid card. Circle No. 8

Ventilation

Catalog 1160 from the Sturtevant Division of Westinghouse Electric Corporation, Hyde Park, Boston 36, Massachusetts lists ventilating sets with various sized components and complete specifications. This booklet will be of particular interest to engineers with its application, information data on air velocities, recommended velocities, changes of air, motor starters, typical entrance losses and friction charts.

Use postpaid card. Circle No. 9

Handy Clamps and Presses

Handy Manufacturing Company, 2432 West Lawrence Avenue, Chicago 25, Illinois offers catalog No. 38 which is a comprehensive catalog of clamping machinery, presses, assembly machinery and woodworkers clamps. A full description of each line of machinery along with complete specifications of each machine in the series is designed to answer any clamping or pressing problem which might occur in a woodworking factory.

Use postpaid card. Circle No. 10

Synthetic Resins

A highly technical and comprehensive booklet on Butvar (Polyvinyl Butyral) and Formvar (Polyvinyl Formal) explaining the properties and the uses of these synthetics will be of interest to all concerned with synthetic coatings and adhesives. This literature comes from Shawinigan Resins Corporation, Springfield 1, Massachusetts and provides much data on the nature of the materials as well as formulations and solvents. The back of the book carries a complete list of relative trade mark chemicals and their sources.

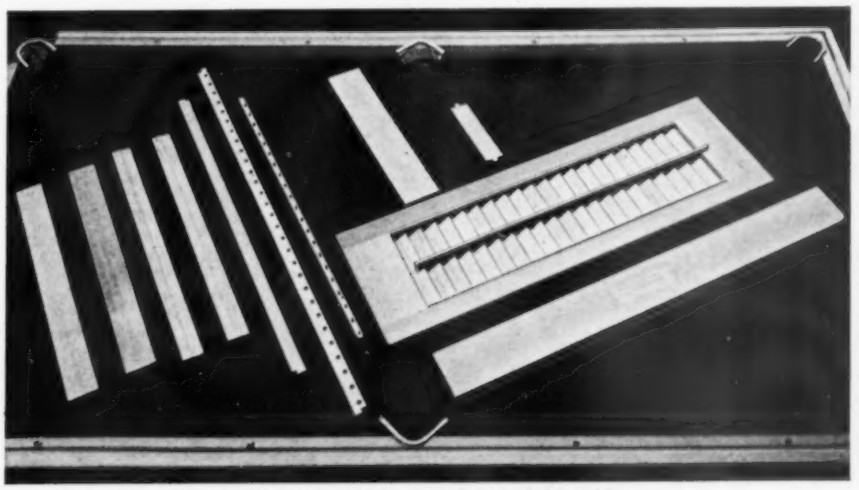
Use postpaid card. Circle No. 11

Strapping

Twelve models of power combination strapping tools are described in detail in a new folder, "Signode Power Combination Strapping Tools," from Signode Steel Strapping Company, 2600 North Western Avenue, Chicago 47, Illinois.

A specification chart lists typical applications for each of four electric-powered tools and eight air-powered tools with maximum strap tension, weight, strap width and seal size for each. The folder also details tool mounts, balancers, balance arms, and suspension brackets.

Use postpaid card. Circle No. 12

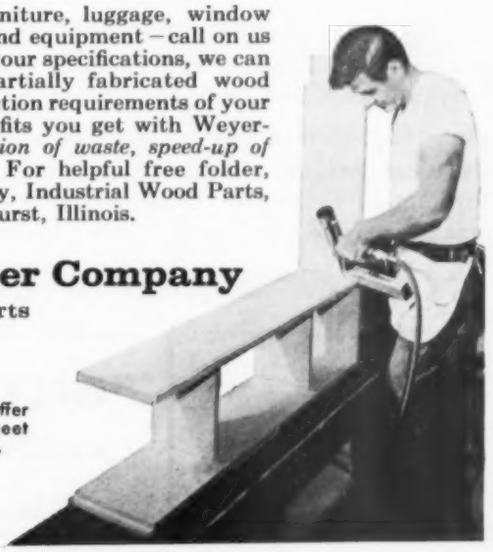


For every product requirement, custom-cut wood parts delivered in "on time" shipments provide new efficiency and cost savings to you.

Wood Parts
to meet your needs

WHATEVER YOU MAKE — furniture, luggage, window sash, garage doors, playground equipment — call on us for wood parts. Working to your specifications, we can provide ready-for-use or partially fabricated wood parts in sizes to fit the production requirements of your product. These are the benefits you get with Weyerhaeuser Wood Parts: *reduction of waste, speed-up of assembly, reduced inventory.* For helpful free folder, write Weyerhaeuser Company, Industrial Wood Parts, Dept. C, P.O. Box 30, Elmhurst, Illinois.

Weyerhaeuser Company
Industrial Wood Parts



Edge- or end-glued parts offer widths and lengths to meet most product requirements.

Builders Hardware

A jumbo 84-page builders hardware catalog No. 58 comes from Knape and Vogt Mfg., Co., Grand Rapids, Michigan. This catalog alphabetically lists everything from various adjustable devices and all glass and sliding doors down to tracts of numerous types and even waste basket holders. Items which will be of special interest to manufacturers include adjustable shelf standards and supports, slotted show case standards and bracket extension, drawer slides including extra heavy duty full extension slides and the self closing slides. Various types of brackets, catches, clamps and patented fasteners are also listed. A complete price list is attached to the back cover for handling reference.

Use postpaid card. Circle No. 13

Diversification

A brochure from Diversification Institute, Inc., 37 Wall Street, New York 5, New York explains the purpose of the Institute and the need for diversification. Reasons for diversification are discussed along with how to approach the problem and pitfalls to anticipate. Services of the Institute are outlined. This material is slanted toward top management and should be of special interest in this 1960 decade of competition.

Use postpaid card. Circle No. 14

Texalon Belting

A new type of flat belting made of a combination of woven textile and flat ribbons of extruded nylon is presented in this folder. Included are all engineering data, horse-power rating per inch of width for various diameters of pulley and belt speeds plus bevelers and presses for easy lapping. Supplied by J. E. Rhoads & Sons, Wilmington 99, Delaware.

Use postpaid card. Circle No. 15

New Band Saw Guide

A new band saw guide with special elements and magnets, claimed to make blades run cool without lubrication, greatly extend useful life, eliminate blade cracking and cut to an accuracy of .004 inches is described and illustrated in a sheet from Chappuis & Co., Suisse, Militarstrasse 76, Zurich, Switzerland.

Use postpaid card. Circle No. 16

Power Tools

Boice-Crane Company, 930 W. Central, Toledo 6, Ohio offers catalog 59 on power tools. This is a 52-page fully illustrated booklet covering practically everything available in light duty power tools from band saws down to supplies and accessories. Equipment and machines for cutting, drilling, shaping and finishing are all included.

Use postpaid card. Circle No. 17

Equipment For Doors and Cabinets

A 20-page catalog, available from The Engineered Products Co., P.O. Box 118, Flint, Mich., contains 79 products including the complete family of friction and magnetic catches for doors and cabinets, the full line of track, guides and glides for sliding glass and panel doors, and a full line of pulls for doors and drawers. Each product is illustrated and accompanied by a description and a diagrammatic drawing.

Use postpaid card. Circle No. 18

Work-Glove Catalog

Monte Glove Co., Maben, Miss. or Shelbyville, Ind., is a producer of newly developed "plied-yarn" flannel gloves, which are one of its "Dura-Ply" styles. A new catalog shows Monte's complete line. The firm is able to fill orders with gloves which are "job fitted," and able also to make

Whether Sanding in the White...

or Sanding Sealer or Wash Coat

National's Model 400 orbital action air sander is speeding the finishing operations of many leading manufacturers of high grade furniture, cabinets, and other wood products.

Fast (4000 to 6000 rpm), lightweight (3½ lbs.), and vibrationless . . . these sanders not only produce a better finish, but can cut sanding time up to 75%. The "Mity-Midget" fits the hand comfortably too, and can be used for hours without tiring the operator.

For a better finish in less time . . .

write for full information

"MITY-MIDGET"

NATIONAL-DETROIT INC.
ROCKFORD, ILLINOIS

NATIONAL N D DETROIT

recommendations for a company's glove requirements.

Also included in the line are gloves of leather, neoprene coated, plastic coated, abrasive finish plastic coated and other materials.

Use postpaid card. Circle No. 19

Safety Posters

"Think Safety!" is the theme of a series of 16 new safety posters published by the Automatic Transportation Co., 149 W. 87th St., Chicago, Ill. These illustrate how accidents involving fork trucks occur and how to prevent them. Each poster is designed to emphasize the importance of safe driving practices by fork truck operators.

Use postpaid card. Circle No. 20

Adhesive Applicator

An adhesive applicator which feeds solvent and water-based adhesives through a flexible hole directly into a brush under ordinary factory air pressure is the subject of a two-page bulletin offered by Bostik Dept., B. B. Chemical Co., 784 Memorial Drive, Cambridge, Mass.

Use postpaid card. Circle No. 21

How To Choose A Business Sign

A colorful brochure containing advice on how to choose a sign for a place of business has been released by Amplex Manufacturing Co., 2325-31 Fairmount Ave., Dept. 54, Philadelphia 30, Pa.

Use postpaid card. Circle No. 22

New Hardware

New hardware ideas dealing with the cabinet, woodworking and millworking trades are supplied in free brochures from Weiss Hardware Manufacturing Company, 169 Bowery, New York, New York. These brochures feature low maker-to-user prices.

Use postpaid card. Circle No. 23

New Air Nigger

Bulletin LNL-2 from the Wheland Company of Chattanooga, Tennessee gives details on Wheland's new low mill air nigger log stop and loader. This machine is claimed to be fast and reliable. A full description is given in the bulletin.

Use postpaid card. Circle No. 24

Accessories for Air Compressors, Paint Sprayers

More than 60 accessory items for air compressors and paint spraying equipment are offered in 22-page Catalog CH-100 B, issued by Campbell-Hausfeld Co., Harrison, Ohio.

Pictured, described and specified are lines of air caps, cup assemblies, material containers, air pressure gages and regulators, air line filters, valves, couplings, hose assemblies, respirators and other products.

Use postpaid card. Circle No. 25

Year End Survey Reveals Value Of End Coating Fresh-Cut Lumber

In a year end survey checking on the effectiveness of wax end coating on fresh-cut lumber one user reported an estimated two extra inches per board were saved and made usable. This amounted to almost 350,000 additional board feet of lumber which their plant was able to utilize out of a total cut of approximately 15,000,000 bd. ft. per year. The firm also added that this saving represented a value of about $17,500.

The product tested is known as "Sealtite," a special chemical formulation in free-flowing emulsion form. According to the manufacturer, it is available in clear or in brilliantly pigmented colors; it may be used in spray, brush or swab applications.

Manufacturer: Chapman Chemical Co., Memphis 1, Tenn.

Use postpaid card. Circle No. 26

The BADGER Dado Head shown in Fig. 861 was designed to cut a clean hinge groove in mahogany furniture doors, 1½" wide across the grain, with a minimum of tearouts.

This head was mounted directly onto a steel flange, taper pinned to the arbor on the saw motor, using the five bolt holes near the bore of the head. As the motor shaft was only 1" diameter, the head was made with a special high tensile aluminum alloy. Beside being forged, the aluminum disc was ultra-sonic tested for utmost reliability and safety. The 8" diameter head body weighed about 6 lbs. (compared to approximately three times as much had it been made of steel) which made a relatively light load on the motor shaft.

Aluminum is now solving many problems, opening up new possibilities, at no increase in cost over steel. Note the shear-cutting design of the knives gives a smooth, clean cut and the spurs give sharp, clean corners. Note also the recessed steel bolts for mounting the spurs and the steel back-up plates used with standard knife gibs to keep from distorting the head. Because BADGER Knives are straight and thin, they are inexpensive, easily sharpened, easily maintained, and easily set — **in short, you get performance!**

Your goal and the goal of BADGER engineering is to provide clean cutting together with **the least long-range cutterhead expense.** Let's work together to accomplish this goal! Write WISCONSIN and send sketches and samples today!

© 1960 W K.W.

WISCONSIN KNIFE WORKS
BELOIT, WISCONSIN

BADGER

Send for *Free* Cope & Tennon Head Bulletin #500

NAME_____
FIRM_____
ADDRESS_____
CITY_____ STATE_____

Engineers to the Woodworking Industry

Industry Notes

Head of Forest Experiment Station Retires

Richard D. Lane of the Washington, D.C. office of the Forest Service, has been named Director of the Central States Forest Experiment Station here, the U.S. Department of Agriculture announced today. He succeeds William G. McGinnies, Director of the Station since 1953, who is retiring July 31, after 30 years of government service.

Bin Box Design And Promotion Stressed At Boxmakers Meeting

A new publication on the subject of bin boxes was introduced to members of the National Wooden Box Association at its summer meeting held at The Homestead, Hot Springs, Va., on June 20-21. This brochure outlines the advantages and limitations of materials handling in bulk containers in industry and agriculture. Various types and styles of bin boxes are described, and the different factors which must be taken into account in designing the proper bin box for a particular application are outlined. It was announced that the booklet would be available to user organizations through individual box manufacturers.

A panel of manufacturers, led by F. Perry Smith, Jr., Cumberland, Md., discussed specific bin box applications and presented their various views on design principles and construction details. Association exhibits were authorized at the regional Materials Handling shows to be held in Louisville, Ky., on November 8-10, 1960, and in Philadelphia on May 9-10, 1961. Bin boxes and other materials handling devices produced by the industry will be featured.

Finishing School Creates 28 Ideas

Sixty days after the close of the Finishing Seminar, sponsored by the Wood Office Furniture Institute at North Carolina State, an evaluation study of seventeen "students" who attended revealed 28 practical ideas "at work" as the result of the course. Plant superintendents, engineers and finishing foremen—examined subjects ranging from wood preparation and sanding, to improved methods, such as airless spraying and coating machines. New methods of sanding, quality control and polyesters were treated in the classrooms and the laboratory.

This Seminar, the second WOFI sponsored cost-reduction "short course" was especially designed for Institute member companies. A new course will be announced for 1961.

Weyerhaeuser and Roddis Plywood Agree on Stock Transfer

The general principles under which the properties of Roddis Plywood Corp. would be transferred to Weyerhaeuser Co. in exchange for Weyerhaeuser stock have been agreed upon, it was jointly announced here today by Norton Clapp, president of Weyerhaeuser, and Carroll Blanchar, president of Roddis.

Under the memorandum of intent signed by the two companies, Roddis shareholders would receive .56 of a share of Weyerhaeuser stock for each share of Roddis. The transaction is subject to the negotiation of a definitive agreement, further examination of the Roddis properties by Weyerhaeuser and approval by the stockholders of Roddis.

Roddis is a manufacturer of hardwood products such as veneers, a full line of doors, lumber and plywood, and other hardwood specialties which are

Make perfect joints faster every time with

TITE-JOINT FASTENERS!®

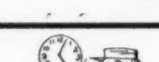
Only with Tite-Joint Fasteners can you get perfect matching joints every time, even on complicated wood assemblies. Mating pieces are drawn together *internally* so that joints won't buckle or twist — and they're stronger than if they were glued.

Ideal for: Counter tops • Fixture panels • Displays • Furniture • Long Lengths • Complicated curved sections

Now used more than any other wood fastener for joining two pieces of plastic laminated plywood.

TIGHTER JOINTS Every pound of force exerted on the locking lever applies approximately 500 pounds of clamping pressure at the joint.

PERFECT JOINTS Internal clamping prevents buckling, assures smooth, flush joints. Permits close fit to other surfaces.



SPEEDY INSTALLATION Joints can be made faster because of exclusive Tite-Joint draw bolt design. Easy-to-follow directions supplied.

EASILY DISASSEMBLED Pieces joined with Tite-Joint Fasteners can be quickly and easily taken apart to facilitate shipping.

KV FIXTURES

KNAPE & VOGT MANUFACTURING COMPANY
Grand Rapids, Michigan

distributed through its own wholesale outlets located throughout the country.

Weyerhaeuser is a diversified producer of Western softwood lumber and plywood, as well as pulp, paperboard, and converted products.

The Roddis transaction will mark Weyerhaeuser's entry into the hardwood field. Clapp stated that the Roddis business will be managed intact as a division of Weyerhaeuser.

NRLDA Committee Adopts Standardization Program

The Materials Handling Committee of the National Retail Lumber Dealers Association has adopted a "unit standardization program" to make lumber and other building products more easily handled and shipped. The program will be taken to the manufacturers, wholesalers, railroads and truckers to aid in lowering costs of materials handling.

The basic unit for lumber shipments under the program is 48 inches wide and 45 to 48 inches high. The 3 inch variation in height is to allow manufacturers leeway when unitizing products that do not multiply out at an even 48 inches. Products which do not lend themselves to the exact 48 inch width requirement may be packaged in multiples that come nearest the recommended width. Length of units will, of course, vary. However, it is recommended that only one length be combined in any one unit.

Nordson Sets Training School Dates

The Nordson Corp., Amherst, Ohio, has announced two fall sessions at their training school on the operation and maintenance of airless spray equipment. The dates are September 13-16; November 15-18.

The curriculum of the Nordson Training School includes: modern coating materials, use and maintenance of Airless Spray painting equipment, spray techniques, trouble shooting. Tuition is free. Anyone genuinely interested in Airless Spraying may attend.

Because of the growing interest in these training schools, it is advisable for those who wish to attend to make application as far as possible in advance. Application blanks and additional information may be obtained from the Nordson Corporation, Amherst, Ohio.

New Testing Program Aids Plywood Industry

Mills subscribing to the quallty control testing service offered by the Timber Engineering Company of Washington, D.C., will produce enough plywood during 1960 for its use in 400,000 new homes—one-third the annual rate of housing starts in recent years. The company is an affiliate of the National Lumber Manufacturers Association.

William Scheick, Vice President for Research, said 1960 output of ten Western softwood plywood mills utilizing the service is expected to exceed 600 million square feet. An average of 1500 square feet of softwood plywood is used in each new dwelling unit, according to latest government statistics.

Machine Tool Exposition and Production Engineering Show

Automation, the key to manufacturing during the 1960s, will be the theme of most exhibits at the Production Engineering Show.

The huge exposition, twice the size of the one held five years ago, will cover both sections of Chicago's Navy Pier and will run concurrently with the Machine Tool Exposition at the International Amphitheatre, September 6 through 16.

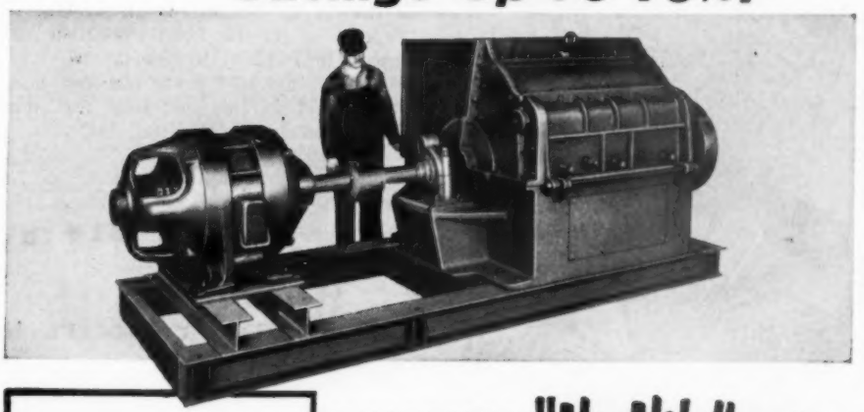
Both shows will be managed by Clapp & Poliak, Inc., New York. The Machine Tool Exposition is sponsored by the National Machine Tool Builders Association. The Production Engineering Show is presented by agreement with the association but is independent of it.

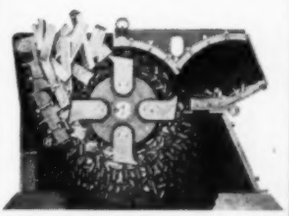
National Particle Board Association Held Meeting

The newly formed National Particle Board Association held its first semi-annual meeting at the Brown Palace Hotel in Denver, Colorado on June 2, 1960. All 16 companies, who are active members of the Association, were represented at this meeting.

The highlight of the meeting as an-

Convert Wood Scrap to better fuel at Savings Up To 75%!





Above cross section of "No-Nife" Hog shows how fast-revolving chisel-edge hammers reduce wood by impact to a specified size to pass through grate at bottom of hog.

WILLIAMS "No-Nife" HOGS

pay back their cost fast!

❶ Reduction to chips makes wood completely burnable, efficiently extracts every BTU, minimizes smoke, soot, residue. Burning jumbled lengths, widths and shapes restricts air flow, smothers fire, wastes most of wood's heat value.

❷ In chip form, one man with a shovel can fire as much fuel tonnage as three men handling individual awkward strips and pieces of scrap—save two-thirds the labor cost.

Completely Automatic Systems

to hog and convey wood waste to boiler—or to grind, separate and package saleable wood particles, sawdust or flour—has produced phenomenal profits for many firms.

WILLIAMS
also designs and builds: Grinders and Shredders—Vibrating Screens—Mechanical Air Separators—Heavy Duty Fans—Cyclone Collectors—Complete "Packaged" Plants.

Write for complete brochure

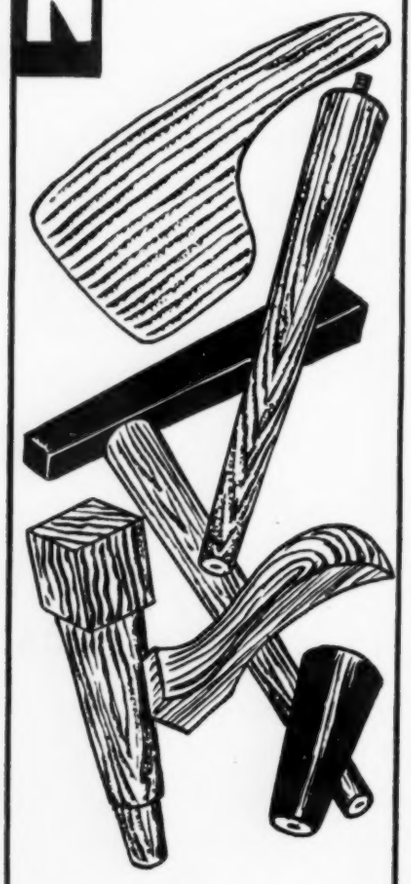
WILLIAMS PATENT CRUSHER & PULVERIZER COMPANY
808 St. Louis Ave. • St. Louis 6, Mo.

COGGIN

YOUR COMPLETE SOURCE

for the *Finest* in

Legs — Wood arms for metal chairs — Desk tops — Frames — Fancy faces, fully machined, circled, bored and shaped, etc. . . .



We manufacture only to your blueprint specifications, for style and dimensions, finished or unfinished in oak, gum, ash, maple, walnut, birch or other specified woods — plywood and solid.

Why not discuss your requirements with us, before you buy?

For prompt quotations — wire or write today.

WM. B. COGGIN Inc. Dept H

HARRISON 7-3555

224 S. Michigan Ave., Chicago 4, Illinois

nounced by the President, David C. Greeley of the Weyerhaeuser Company, was the work of the Association Technical Committee with Paul McCormack of National Starch as chairman. Action programs developed by the committee and approved by the board include the following:

1. Finalization of industry commercial standards for particle board to be established with the Technical Standard Division of the Department of Commerce.

2. Development of special standards to cover particle board used for underlayment to be adopted by the industry as quality standards for performance in this important market.

3. Promotion of a symposium on particle board to be held at the Forest Products Laboratory at Madison, Wisconsin, later in the year.

Another Association program approved by the members includes industry efforts to bring about reasonable tariffs on imported particle board, publicity, and active public relations work with various elements of the flooring industry such as tile manufacturers and flooring applicators.

Greeley announced the appointment of Robert E. Dougherty as Executive Director of the National Particleboard Association. Mr. Dougherty was in attendance at the Denver meeting, and will establish headquarters for the Association in Washington, D.C.

The need for close communication, both within and without the industry, was stressed at the meeting in order for the Association to be most effective in achieving its objectives.

The Association's next annual meeting will be held in Washington, D.C. at the Shoreham Hotel in January 1961.

Goodspeed Buys Baxter-Whitney Plant

Goodspeed Machine Company of Winchendon, Massachusetts recently completed negotiations for the purchase of the Baxter-Whitney plant nearby which makes available to them some three times their present manufacturing space.

Renovations are already in progress to provide expanded engineering and office facilities as well as manufacturing, assembly and shipping operations.

Until sold in 1954 Baxter-Whitney manufactured planers, shapers and back knife lathes.

Soderhamn Sales Force Meet New Machines

Sales representatives of Soderhamn Machine Mfg. Co. met recently in Alabama. Gus Jacobson, president, introduced two new Soderhamn machines, the new Ro-Vac 30" rotor barker and

better use of storage with...

Washington High Impact Polystyrene

AVAILABLE IN 3 SIZES

School Rooms

Industrial Shop Storage

WANTED! SPOTLESSLY CLEAN SEPARATE STORAGE
ANSWER: MOLDED POLYSTYRENE *TOTE TRAYS*

These strong, easy-to-clean trays are ideal when categorized storage is required. Each has its name-card holder in place. It's tough, molded rim makes it easy to carry . . . easy to slip into storage. Send for Tote Tray specifications and suggested uses today!

Washington DISTINCTIVE BUILDING PRODUCTS

WASHINGTON STEEL PRODUCTS, INC.
DEPARTMENT HWW-I
TACOMA 1, WASHINGTON

a new scraper head barker. The sales representatives watched as the machines were put through their paces; they were of the opinion that the machines would effectively serve the sawmill industry in recovering valuable by-products.

The Ro-Vac Barker, partially shown above, is the latest and lowest cost rotor barker, and handles logs up to 30" diameter, pine and hardwoods intermixed. The other machine is a new low-cost heavy-duty Scraper-Head barker designed for West Coast or other area use where large logs are normally encountered, barking logs up to 60" diameter at low cost. Shown before one of the machines above are some of Soderhamn's Regional Sales Managers and members of the company's development staff.

Appointments and Promotions

Harry Raech, Jr. has been named Western Regional Manager of Food Machinery and Chemical Corporation's Dapon Department and **Foster Nostrand** becomes Sales Promotion Manager of the Dapon Department.

Four new vice-presidents are included in a list of six executive appointments being announced by The Bauer Bros. Co., Springfield, Ohio.

New vice-presidents are **Edward L. Rastatter,** sales; **James E. Irvine,** engineering; **Ronald G. Goodwin,** pulping development, and **Thomas T. Cowhey,** general manager of The Bauer Bros. Co. (Canada) Ltd. Also, **Richard R. Dill** was named manager of sales, industrial equipment, and **Anton J. Horstman** was appointed assistant to the administrative vice-president.

Richard R. Dill

Robert E. Dougherty

Robert E. Dougherty of Silver Spring, Maryland has been named Executive Director of the National Particleboard Association. Dougherty assumed his new duties as of June 1st, and participated in the Semi-Annual Meeting of the Association held in Denver on June 1-2.

The offices of the Association will be located in Washington, D.C. Pending the selection of a permanent location, Mr. Dougherty will make his office in the Associations Building at 1145 19th Street, N. W., Washington, D.C.

Robert G. Jorgensen

W. L. Wellford, Jr.

Robert G. Jorgensen, vice president of Jorgensen-Bennett Manufacturing Company and **Walker L. Wellford, Jr.,** president of the Wel-Dri Company, have organized a new corporation which will be known as Jorgensen-Wellford, Inc., P. O. Box 4776, Memphis, Tennessee.

At the present time the new company will be primarily interested in the manufacturing and sales of the Jorgensen-Wellford UNI-FEED Material Handling System.

This unique system handles any type of wood waste such as sawdust, chips, bark, blocks, knots, etc.

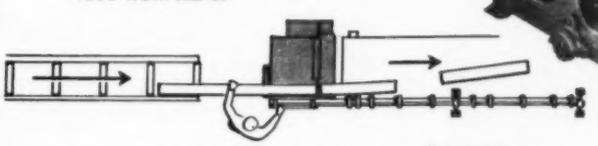
Officers of the new corporation are Robert G. Jorgensen, president, and Walker L. Wellford, Jr., secretary-treasurer.

Frank J. Brundage has been named New England division manager, Na-

IRVINGTON No. 19

For automatic or selective cutting in soft or hard woods—all grades—intermixed dimensions. Smooth stroking action. Safest saw in the cut-off field. Designed for minimum maintenance. Adaptable to a variety of flow patterns.

Saw Diameters: 16" and 18".
Capacities: 2½ x 18—3½ x 17—4 x 8.
Stroke Speeds: Up to 90 cuts per minute.
Motors: 5 or 7½ horsepower.
Equipment: Hi-production tumbler stop gauges. Kicker. Dust hood. Infeed work table.



High Precision *plus* High Output

Irvington

AUTOMATIC CUT-OFF SAWS

IRVINGTON No. 26A

A selective over-cutting cut-off saw for continuous high output and accuracy. Air-operated cushion stroke. Design simplicity assures minimum maintenance and easy installation.

Saw Diameters: 16" to 24".
Capacities: 1½ x 16—6 x 13.
Stroke Speeds: Up to 90 cuts per minute.
Motors: 3, 5, 7½ horsepower.
Model No. 26M *electrically* operated.
Model Nos. 26AD-Air and 26MD-Electric *dual* saws for re-trim and grade trim in planing mills.

Write for details:

Irvington

P. O. Box 6438 • Portland 23, Oregon
or 3 Colfax N.E. • Grand Rapids 5, Mich.

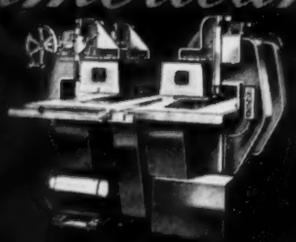
REAL ECONOMY LASTING SATISFACTION

in

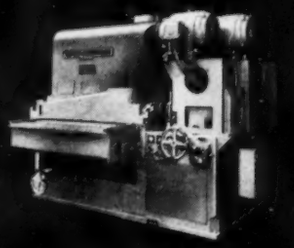
WOODWORKING MACHINES & TOOLS

ALL TYPES... ALL SIZES

by *Yates-American*



G-82 TWINRIP



S-53 SANDER

B-24 SURFACER

YOURS ON REQUEST...
Assistance of the Y-A Engineering and Research Staff is the most practical and economical solution to your woodworking problems.

Over 75 years service to industry

Yates-American MACHINE COMPANY
723 4TH ST., BELOIT, WISCONSIN

Charles R. Onsrud

Robert N. King

tional Starch and Chemical Corporation. Brundage is assuming responsibility for all product lines of the company.

R. F. Onsrud, newly elected Chairman-of-the-Board of the Onsrud Machine Works, Inc., Niles, Illinois has announced the election of the following new officers: **Charles R. Onsrud,** President; **Hjordis R. Krabol,** V.P. and Treasurer; **John M. Wilkin,** Secretary and **O. B. Anderson,** Assistant Secretary.

The appointment of **Robert N. King** as Director of Foreign Sales for Signode Steel Strapping Company, Chicago, has been announced by John H. Leslie, President.

King joined Signode in 1952, promoting sales and establishing distributorships in the Middle and Far East. He became the first managing director of the Swedish subsidiary in 1954, and in 1957 established the manufacturing and sales organization of Signode's subsidiary in Dinslaken/Niederrhein, Germany.

The appointment of **William S. Alden** as managing director of Porter-Cable Power Tools (Canada) Ltd., of Kingston, Ontario, is announced by Robert C. Tyo, president of the Porter-Cable Machine Company.

Mr. Alden will assume his new duties July 1, as head of the Canadian subsidiary which recently moved from London, Ontario, to new and larger headquarters at Kingston.

John K. Meany has been appointed Southeastern Division manager for the adhesives, resins, and structural products divisions of National Starch and Chemical Corporation.

Ted Krauth, of the Tri-States Spray Equipment Co., 1118 Farnam, Omaha, Neb., has been appointed factory representative for the driQuik line of ceramic-type electric infra-red industrial drying ovens. The ovens are manufactured by the Dry Clime Lamp Corp., Greensburg, Indiana.

Irby S. DeFenelon Co., Inc., distributors of dimension wood parts and lumber has announced the appointment of **R. E. Brandenburger, Jr.** as sales representative for Northern Indiana, Southern Michigan, Northern Kentucky, Ohio and Illinois.

The appointment of **Frank Burgmeier** as public relations director of Porter-Cable Machine Company, Syracuse, N.Y., has been announced. Porter-Cable is a leading manufacturer of portable electric tools and gasoline powered garden equipment.

WHAT'S YOUR WOOD PROBLEM?

Having trouble with *poor packaging?*

Do you know the aggravation of receiving a shipment of burst-open-and-scattered wood parts? Worse yet, has your production been delayed while you waited for replacement of shipment-damaged parts?

Gamble Brothers does not bundle finished wood parts — we *pack* them in corrugated board cartons secured by steel straps. Most of these cartons are made right at our plant, since each of our orders is individually processed and packaged.

If headache-free wood parts are worth a few cents more to you, you can benefit from Gamble's 65 years of wood-engineering experience and quality tradition. Write for facts, naming the improvement you'd like to make in your products.

Send for FREE booklet Illustrating GAMBLE services

This 28-page booklet describes Gamble facilities and services in detail. Includes many photographs of unusual products designed, tested and perfected by Gamble Brothers. Write for your copy today! Gamble Brothers, Inc., 4615 Allmond Avenue, Louisville 9, Ky.

GAMBLE BROTHERS
Incorporated
Louisville 9, Kentucky
If the problem involves WOOD —GAMBLE can help!

Versatile Precision Machines

A brand new brochure describes the complete line of Bell "Tools of the Trade." Descriptions and illustrations include double end sawing, boring and chucking post boring, gluing and doweling, multiple head mortising, horizontal boring, double miter and cutoff and electronic edge gluing machines. This new literature comes from the Bell Machine Company, 123 Jackson Street, Oshkosh, Wisconsin.

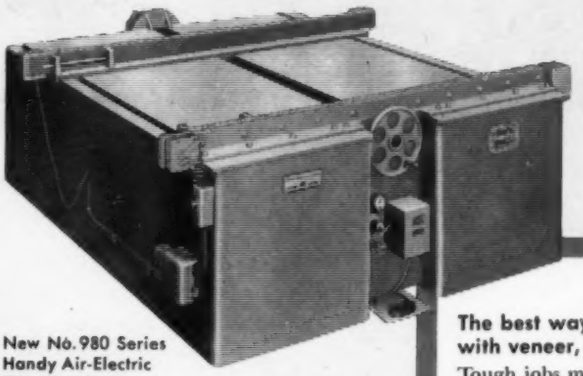
Use postpaid card. Circle No. 1

Snap Action Switches

New literature is available from Micro Switch Division of Honeywell, Freeport, Illinois, an especially interesting item in the package of literature is one entitled "Thinking Small" the story of subminiature switches. Other material explains the different types of Micro Switch devices and their applications. The company actually offers 11 different catalogs which are available on request. These include small basic switches, mercury switches, basic switches for industrial and commercial applications, micro switch trip control, heavy-duty limit switches, toggle switches, lighted display and push-button switch devices, micro switch precision switches, basic switches for airborne equipment.

Use postpaid card. Circle No. 2

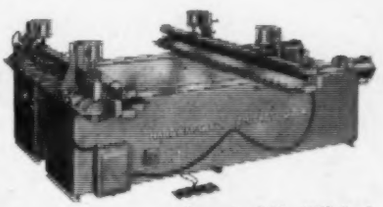
BANDING & RIM BONDING



Better Tops—faster, automatically at lowest cost

handy

New No. 980 Series Handy Air-Electric Edge Banders



Improved No. 990 Series Handy Air-Electric Wood Moulding Bonders

The best way to band tops with veneer, plastic or moulding

Tough jobs made easy—that's what these Handy machines do. Heat, time and pressure are accurately controlled automatically.

Edge Banding with veneers, plastics and kraft is done almost instantaneously with the No. 980 Series. Adjusts quickly for any size rectangular top. Operation is simple and dependable.

Rim mouldings are bonded to desk and fixture tops in a few minutes with far less labor and space. Two-way pressure of the No. 990 Series straightens moulding. Versatile, trouble-free.

The features of these machines are available also in a Combination Bander-Bonder.

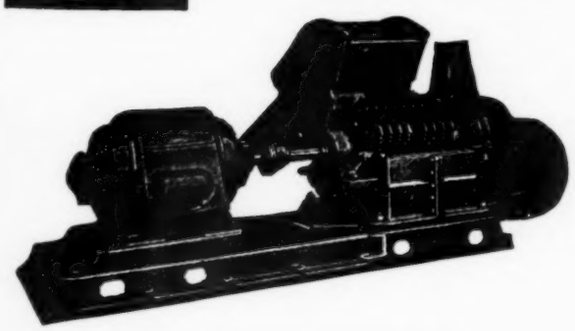
HANDY Manufacturing Company

2436 West Lawrence Avenue • Chicago 25, U.S.A.

JAY BEE

GRINDERS

- WOOD SCRAP
- SHAVINGS
- WOOD FLOUR



MODEL "W" INDUSTRIAL HAMMERMILL

CONVERT YOUR WOOD WASTE TO PROFIT

Internationally Used For Over 35 Years

J. B. SEDBERRY, INC.

P. O. BOX 986 DEPT. WD

TYLER, TEXAS

KIL-MO-TROL
a new kiln control

The kiln keeps operating . . . you stay outside and measure moisture content of lumber while it is in the kiln!

KIL-MO-TROL is an electrical system easily installed in any dry kiln to measure moisture content of lumber while it is drying and without a kiln shutdown.

With KIL-MO-TROL you measure the moisture content on lumber that is to be used in actual production, not sample boards. Readings are made on a meter located in the Kiln Office or on the Kiln Control Board. Both shell and core moisture content readings can be made in moments without the unpleasant task of entering a hot kiln.

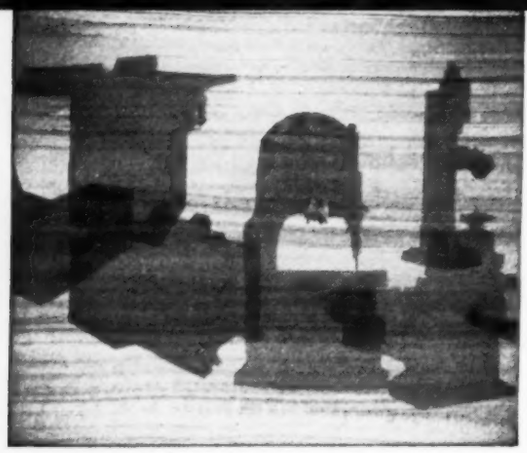
The wet and dry bulb thermometer indicates temperature and humidity conditions within the kiln. Now the KIL-MO-TROL shows exactly how the lumber is drying, when the lumber is dry and when the kiln should be shut down!

IMPROVES KILN PERFORMANCE

KIL-MO-TROL shows when lumber dries fast or slow and indicates faults such as excessive or inadequate radiation, clogged traps, faulty baffling and burned out motors, which become immediately apparent.

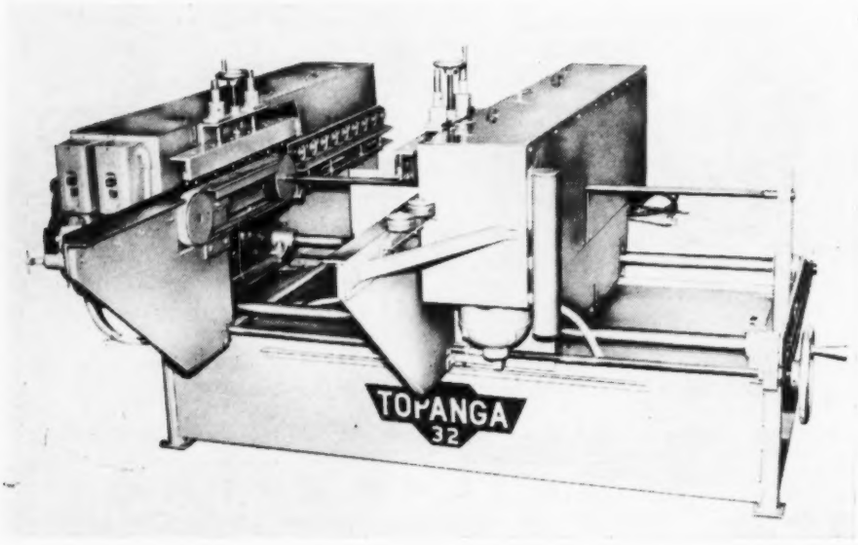
KILN INSTALLATION LAYOUT PROVIDED AT NO CHARGE.
WRITE FOR FURTHER INFORMATION.

DELMHORST
INSTRUMENT COMPANY
638 CEDAR ST. BOONTON, N.J.

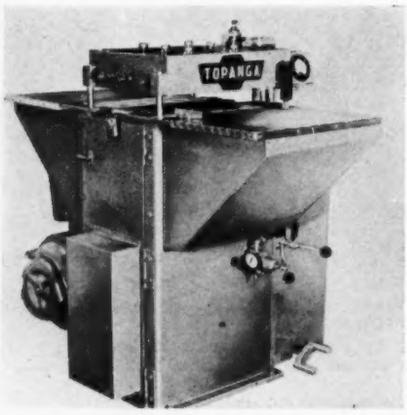


equipment and supplies

Automatic Oscillating Belt Sanders



Two new automatic sanding machines are in production at Topanga Engineering Company: the No. 60, a wide belt sander and the No. 32, a double edge sander.



The Topanga 60 operates with a wide sandbelt running from below. In the work area the belt is backed by an air-cooled, adjustable 3" wide platen head. Belt tensioning is accomplished by a preselected counter weight. This insures uniform pressure regardless of the dimensional change which results as sandbelts are run.

The upper feed structure raises and lowers for stock thickness; the material is clamped and conveyed by positive feed rollers. The structure also adjusts automatically to oversized material.

A newly designed sensing device controls the handbelt's oscillating. Material from 1/32" to 5" in thickness and 6" to 36" in length can be sanded to plus or minus .002" tolerance. Standard feed speeds range from 25 to 75 ft. per minute.

Model No. 32 sands two edges in one pass and has many of the features contained in No. 60. It handles stock 1" to 6" (single) and 6" to 50" (double). Equipped with two opposed mounted sandbelts backed by platen heads in the work areas, each assembly is individually mounted and power driven. **Manufacturer: Topanga Engineering Co., 11821 Teale St., Culver City, Calif.**

Use postpaid card. Circle No. 27

Bandsawing Machines Cut Wide Variety of Materials

Pehaka high power bandsawing machines are available with wheels of seven different diameters—16", 24", 28", 32", 36", 42", and 50"—for cutting wood, artificial material, foam rubber, and all sawable material.

Units with saw wheels 16", 24", 32", and 36" in diameter can be supplied with a unit welded steel sheet frame and varying cutting speeds, as well as with stepless variable.

The bandsaw wheels are dynamically and statically balanced. At the rear the upper saw wheel is protected by steel plates, and the saw blade is covered up to the working point.

These machines are equipped with a parallel fence to be used over the whole width of the saw table. A blade tensioning device simplifies the adjustment of the tension of saw blades.

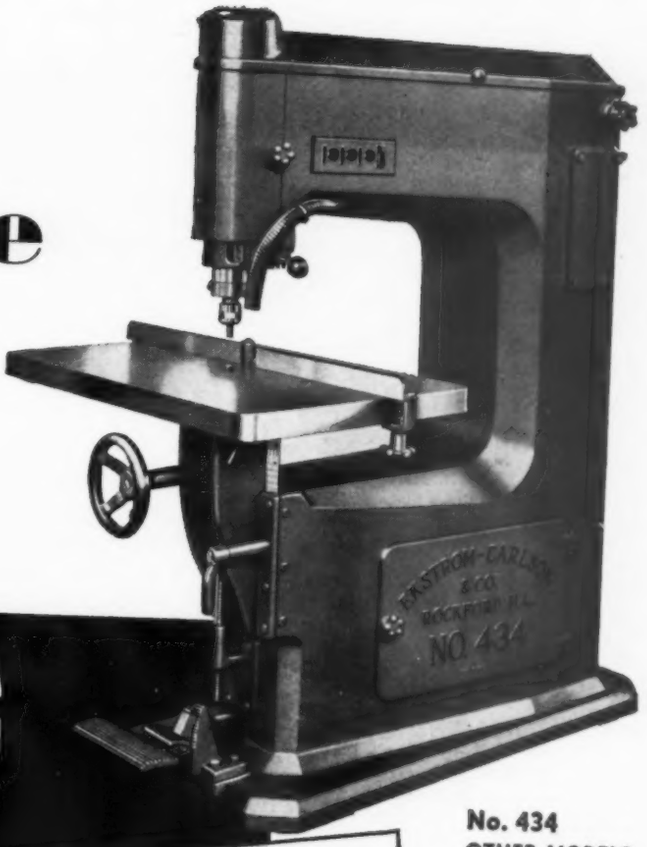
For best results, the band speed should be adjusted according to the thickness and hardness of the material.

For sawing ½" soft wood the best speed is approximately 6880 fpm, while for 8" hardwood it is about 2400 fpm. The infinite variable gear permits easy adjustment of cutting speed while the machine is running.

Manufacturer: Petzing & Hartmann, Kassel, Germany.

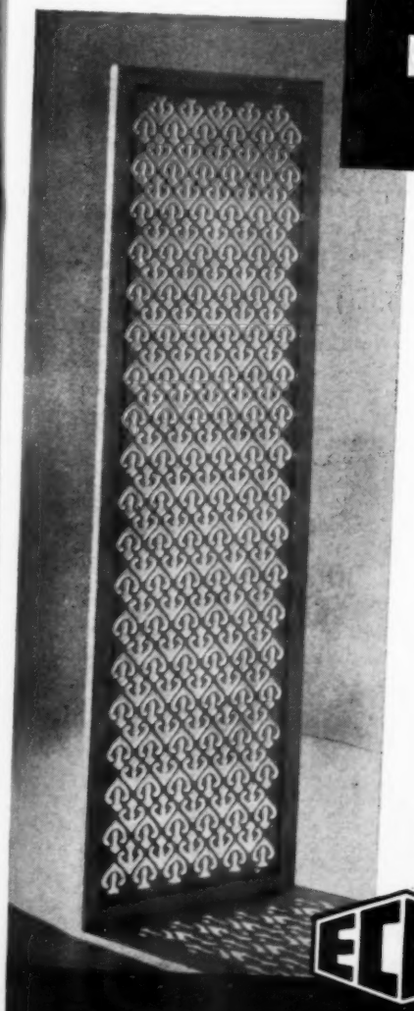
Use postpaid card. Circle No. 28

Unexcelled Performance with



EKSTROM CARLSON Routers

No. 434 OTHER MODELS AVAILABLE



Bigelow 3-7110-1

General Wood & Display Products Co., Inc.

Manufacturers of Fine Wood Products

442 FRELINGHUYSEN AVENUE, NEWARK 5, NEW JERSEY

November 12, 1958.

Ekstrom, Carlson & Co.,
1400 Railroad Avenue,
Rockford, Illinois.

Gentlemen:

Several months ago we purchased an Ekstrom Carlson No. 434 Sliding Spindle Router through your representative, American Woodworking Machinery Company, Hackettstown, New Jersery. We are so enthusiastic about this machine and pleased with its fine performance, that we feel we would be remiss in not telling you about it.

This Router has been in continuous use ever since we made the purchase, to do very exacting routing operations as pictured in the attached photograph. The quality of the work turned out by this machine is excellent.

We have also found the Ekstrom Carlson router to be very responsive in its adjustment and controls, to the will of the operator. As our demand for exacting routing work continues, it will not be too long before we will need another machine of this type and be assured it will be an Ekstrom Carlson.

We heartily recommend the purchase of this unit by any plant where routing operations are part of production.

Yours very truly,

GENERAL WOOD AND DISPLAY PRODUCTS CO., INC.

A. J. THEORET, President.

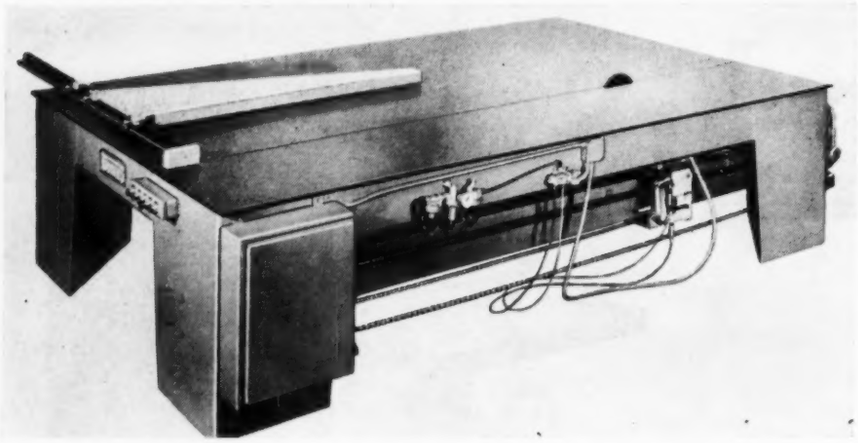
ECCO

Write for Bulletins

EKSTROM, CARLSON & CO.

1401 RAILROAD AVENUE • ROCKFORD, ILLINOIS

Panel Cutter Features Constant Repeat Accuracy



Automatic panel saw is engineered and built for a long lifetime of precision cross-cutting, ripping, and squaring full panels and large sheets, with constant repeat accuracy. Powered by a 5 hp, 3-phase, 3600 rpm direct drive motor, with a 1 in. life-time sealed ball bearing arbor, saw makes a maximum cut of 8 ft, travels at a speed to 80 fpm, and has a blade up to 16 in. and maximum depth cut of 3 in. Adjustable travel-limit switches allow all cutting capacities from 0 to 8 ft. (Longer cutting capacities available.)

According to Rodgers Machinery Mfg. Co., travelling motor carriage has 8 adjustable sealed ball-bearing rollers with extra heavy hardened outside races mounted on multi-supported hard-chromed bars. Carriage is roller-chain power driven by a ½ hp, 3-phase gear drive motor, with instant electric brake at both ends of the stroke.

Saw arbor raises and lowers by air cylinder control which allows blade to be dropped below the surface of cutting table for return strokes.

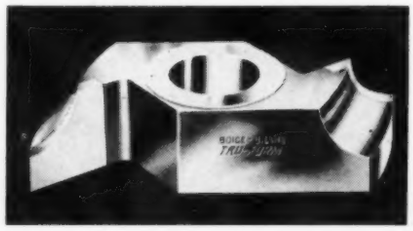
Saw is completely equipped with magnetic switches. All motor controls and a quick-change rip fence are mounted within instant touch of operator for maximum efficiency and safety.

Manufacturer: Rodgers Machinery Mfg. Co., 2121 Belgrave Ave., Huntington Park, California.

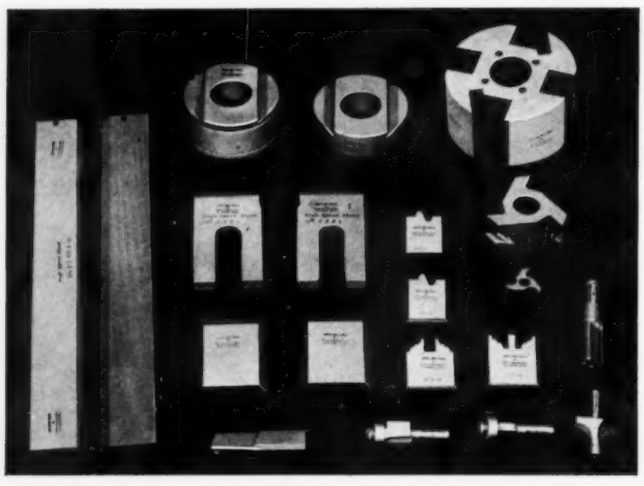
Use postpaid card. Circle No. 29

Manufacturing Breakthrough Reduces Cost of Carbide Tipped Cutters

Carbide tipped, involute relief cutters are described as delivering to 10 times the productive life of ordinary cutters when working plywood and resin-bonded chipboards. The cutters, writes Boice-Crane Co., employ a new sintered titanium carbide which has the property of easy machinability in the



soft state, and hardening properties closely comparable to tungsten carbide or cast cobalt alloy tool components.



WES-TURN

Complete line of quality
High Speed Steel and Carbide
cutting tools for wood and plastics

WRITE TODAY FOR CATALOG

WALTER ALEXANDER & CO., INC.
6114 WYCHE BLVD. • DALLAS 35, TEXAS • FLeetwood 1-4141

Agent and Dealer inquiries invited

A REAL SHARPENER BUY
FOR CROSS CUT AND RIP SAWS

Men who know prefer the Wardwell Y-18 EVERYTIME

- **SHARPENS**
- **JOINTS**
- **BEVELS**

Automatically in ONE Operation

- **Makes Perfect Cutting Circle**
- **Increases Saw Life**
- **Increases Cutting Production**

AC 38 Circular Saw Setter Saws 5 to 38" dias. set at 200 teeth per min.

Write today for Prices and Details On the Best Saw Sharpener Made.

WARDWELL
Manufacturing Co.
3806 Ridge Road
Cleveland 9, Ohio

Makers of Largest Line of Saw and Tool Sharpening Machines

Consequently, expensive diamond grinding and specialized labor skills required to shape hardened tungsten-carbide tips are eliminated. Accordingly these new shaper cutters can be priced 40 to 50% below tungsten-carbide tipped cutters of equivalent size and shape. Available in a wide variety of shapes for cabinet work, sash, and millwork, in ½, ⅝, and ¾ inch bores for most makes of shapers.

Manufacturer: Boice-Crane Company, 931 Central Ave., Toledo 6, Ohio.

Use postpaid card. Circle No. 30

Circular Saw for Plywood and Solid Wood

New from the Atkins Division of Borg Warner Corp., is the double duty "A-80" circular plywood saw. It is claimed the new saw will cut up to

1¼" plywood and up to 3" solid wood with glue-joint smoothness and less noise. Special side clearance grinding and heavy beveled, filed teeth are said to insure faster, splinter-free cutting in both ply and solid woods.

Mirror-smooth, hard chrome finish and special expansion slots on the "A-80" is said to reduce friction, which in turn, reduces heat and noise. In addition, an improved tempering process is claimed to permit more cuts between sharpenings and longer over-all blade life.

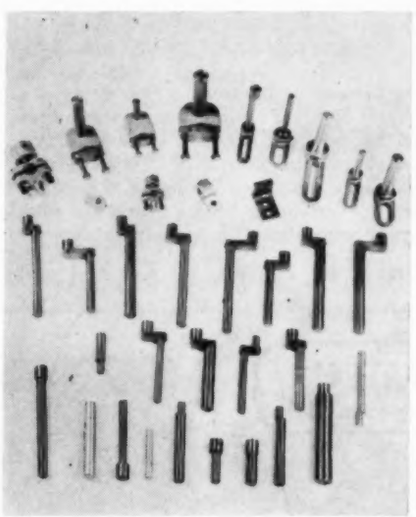
The new double duty "A-80" is the latest addition to the Atkins line of professional quality circular saws. Designed for dual-purpose, precision cutting, it is believed to be the only blade of its type available. The saw is furnished only in 8" diameter, 16 gauge with 80 special teeth and ⅝" hole bushed to ½".

Manufacturer: Atkins Saw Division, Borg-Warner Corp., Indianapolis 25, Ind.

Use postpaid card. Circle No. 31

Mounting Brackets Adapt Band Saw Guides to Machine

A new line of universal mounting brackets adapt Carter band saw guides to any band saw machine for safe, trouble-free operation at any speed or load. The new brackets permit ready replacement of any old style No. 2, No. 1, No. 0, No. 00 or three-roller type guide with new Carter Guidall "400" or micro-precision guides.



Upper mountings are used where space between post and blade is limited. Lower mountings are for machines with eccentric bushings of offset mounting holes. A special one uses an auxiliary angle mounting bracket.

Manufacturer: Carter Products Co., Inc., 421 Helmer Bldg., Grand Rapids 2, Michigan.

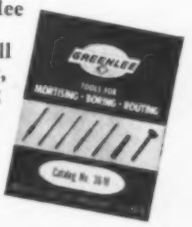
Use postpaid card. Circle No. 32

GREENLEE MULTI-SPUR MACHINE BITS BORE AT ANY ANGLE WITHOUT SPLITTING STOCK

Veneers, plywoods, hard woods, soft woods . . . Greenlee Multi-Spur Machine Bits bore at any angle or overlap . . . even on edges . . . without danger of stock-splitting or break-out. Large holes can be bored smoothly, quickly with a minimum of power on small spindle machines. Made of high-grade, alloy steel. Sharpen with a file. Thirty-seven different sizes available from ½" to 4" diameters. Ideal for long production runs. See your nearest Greenlee distributor for Greenlee Multi-Spur Machine Bits.

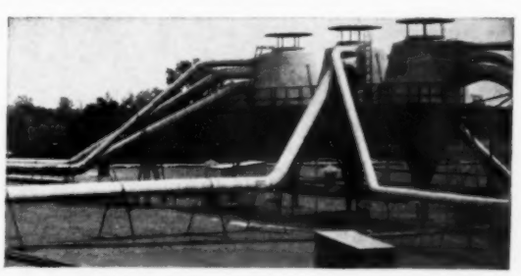
FREE . . .
NEW GREENLEE CATALOG 36-M

Keep this new Greenlee catalog close by. Easy reference for all Greenlee mortising, boring and routing tools. See your distributor or write direct.



GREENLEE TOOL CO.
Division of Greenlee Bros. & Co.
1732 HERBERT AVE.
ROCKFORD, ILLINOIS

FOR A SECTION OR A SYSTEM DEPEND ON DIXIE

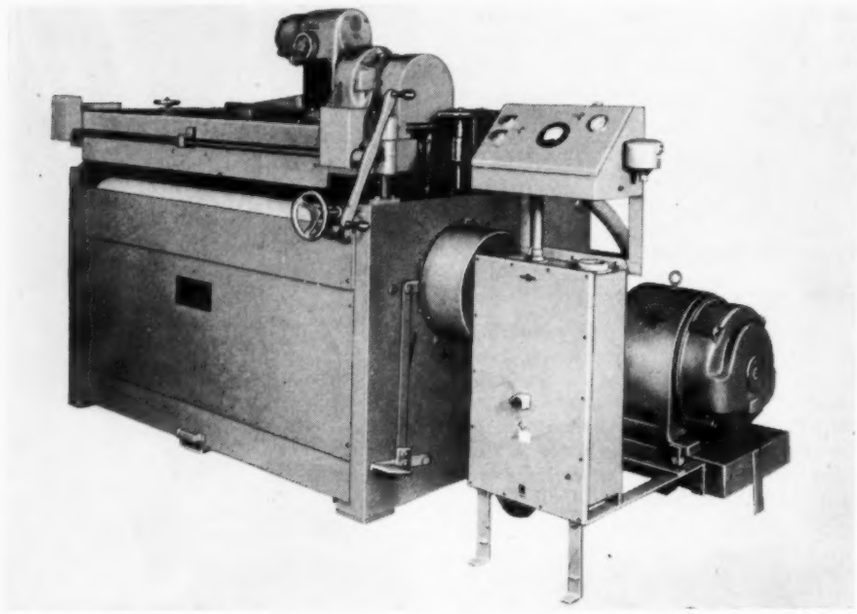


FOR DEPENDABLE DUST CONTROL

Complete systems designed, fabricated and installed by DIXIE Engineers; or fans, collectors and storage bins built to meet your requirements. Write for catalog.

DIXIE MANUFACTURING COMPANY • 1515 W. Patapsco Ave. • BALTIMORE 30, MD.

Wood Sander Uses 50" Wide Belt, 110 FPM Feeds



A new heavy-duty bottom sander and polisher which accepts 50" abrasive belts and handles work at feed speeds up to 110 fpm has been introduced by New Sanders & Polishers Corp.

The Model 50-103 drives the belt in the direction of the work feed at 4000 surface feet per minute and with constant oscillation using a motor of 30, 40 and 50 hp. Running the abrasive belt in the direction of the work feed results in what is known as climb sanding, which eliminates dubbing of the edges on the material being sanded, plus lengthening belt life considerably.

Rolls are dynamically balanced and ground at operating speeds and run on heavy-duty ball and roller bearings, eliminating snake marks and chatter. The serrated-rubber contact roll is 52" long, 18" in diameter. Rubber covering and serration are determined by the individual requirements.

For accuracy, the entire work feed mechanism is housed independently in a separate frame at the top of the machine. A variable speed motor drives three rubber-covered feed rolls through gears, giving feed speeds from 15 to 110 feet per minute.

Manufacturer: New Sanders and Polishers Corp., 3545 S. Morgan St., Chicago 9, Ill.

Use postpaid card. Circle No. 33

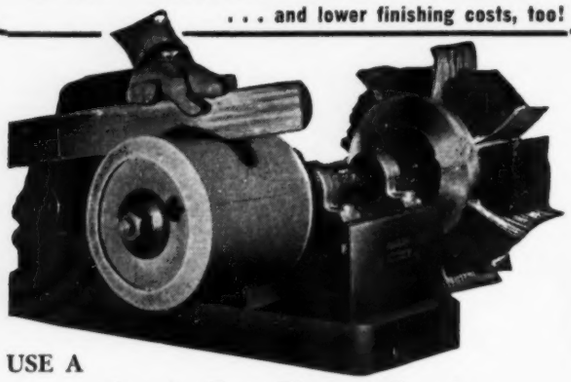
Double Roll Coater Supplies Paint Film Without Marks

New heavy duty coater Model No. 54-B employs the double roller principle which eliminates flow marks when applying a heavy film of lacquer and air dry materials. According to the manufacturer, the double coater also applies an adequate film in grooves and similar hard-to-coat areas. To achieve uniform coating on long panels and to eliminate overlay, a scraper bar is provided on the coating roll.

This model is made of rugged T-type steel plate, and can handle material up

SAND CURVED PARTS FASTER!

. . . and lower finishing costs, too!



USE A

Sand-Rite "Duo" Sander

Sand Parts Like These With Ease:

- CHAIR LEGS
- TABLE LEGS
- CHAIR ARMS
- BRUSH HANDLES
- TOY PARTS
- GUN STOCKS
- DISPLAY FIXTURES
- RAILINGS

and many others

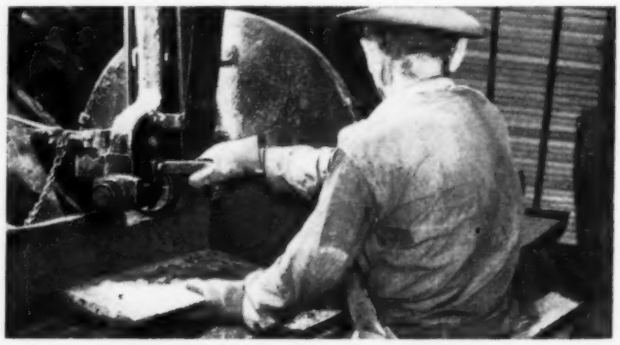
Eliminate hand sanding of irregular shapes and contours on wood parts, while maintaining high quality finishes. The inflated pneumatic drum will always conform to the contoured shape of the part being sanded.

The Sand-Rite Sander can be ordered as shown with pneumatic drum and rotary brush sanding head or with 2 different size pneumatic drums or with a single head of drum or brush. Pneumatic drums are available in 2", 3", 4" and 6" dia. and can be purchased separately as spares or replacements.

Write for full information today

SAND-RITE MANUFACTURING CO.

DEPT. W—226 W. SCHILLER ST.
CHICAGO 10, ILLINOIS



EDMONT CASE NO. 629: Handling green lumber, ordinary plastic gloves wore 20 hours. No. 36 Monkey Grip, Extracoated with vinyl, lasted 64 hours, reducing glove costs 65%.

Extracoated glove wore 3 times longer

No. 36 Monkey Grip fully coated gauntlet

Edmont JOB-FITTED GLOVES

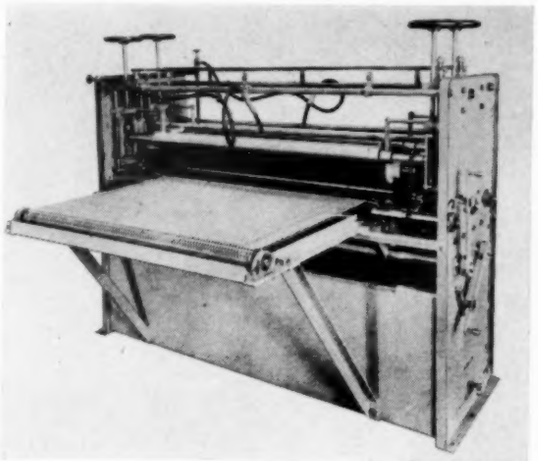
In the case above, Extracoated Monkey Grip gloves save $5.20 on every dozen pairs used. They fit the job because Edmont's exclusive vinyl compound has outstanding resistance to abrasion and snagging. Perfect hand-fitting pattern with wing thumb and curved, pre-flexed fingers. Also available with triple-thick palm coating for extremely abrasive work.

Free Test Offer to Listed Firms: Tell us your operation and materials handled. From more than 50 types, we will supply samples of the correct glove for on-the-job testing.

EDMONT INC.

1246 Walnut Street, Coshocton, Ohio
Edmont Canada Ltd. Cowansville, Que.

to 48" wide and up to 3" thick. The synthetic rubber coating rolls are 6" in diameter by 54" long, and the paint metering rolls are turned out of solid bar steel and measure 3½" in diameter and 51" long. Each coating roll is fully adjustable without changing the setting of the metering roll. Paint supply is retained by adjustable end seals on the coating rolls.



Heavy duty coater Model No. 54-B employs the double roller principle.

A variable speed V-belt drive with conveniently located control, runs the machine at 30 to 90 rpm. Model has a 1 hp motor. All drip pans are easily removed for cleaning.

Optional equipment includes a paint circulating pump at a slight additional cost, a feed in and feed out conveyor, and a safety bar control for operator safety.

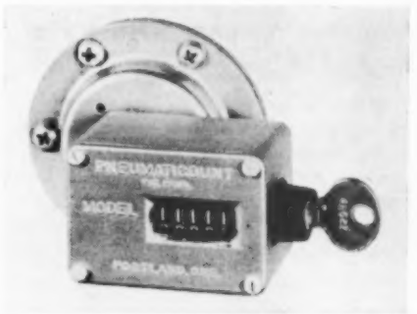
Steel, aluminum, fiberboard, paperboard, and plastic are some of the materials which can be coated with this machine.

Manufacturer: Gasway Corp., 6463 N. Ravenswood Ave., Chicago 26, Ill.
Use postpaid card. Circle No. 34

Accurate Automatic Counting

A new line of accurate automatic devices for plywood equipment controlled by pneumatic action has been announced by Pneumaticount.

Counters are attached to any cylinder or air line on panel turners, panel loaders to sanders and patch line, panel stackers and unstackers, jump rolls and cases, or any air operated patcher. Pneumaticount will tally automatically any operation which is air operated. There is no linkage to assemble or get out of adjustment, no solenoid, and no possibility of half or miscounts.



Particularly adapted for production line use, with "tamper-proof" cases, the Pneumaticount will outwear and outperform mechanical counters yet sells for a total cost of less than the usual installation cost.

Units are available for from 1 to 5,000 pounds and up to 300 counts per minute. All models are available with five

CURVED PLYWOOD?

Made to specification

High-Frequency bonding on low cost forms

Tell us your problem — we'll solve it to your specifications. We manufacture unusual plywood shapes for applications ranging from church pews to water skis . . . table legs to torpedo cradles. Our high-frequency presses mass-produce curved parts fast and at lower cost than other methods, and with greater stability. We have over 200 stock dies available for stock shapes. Write, wire or phone RI-2-2474 for quotations and complete engineering service.

PLY-CURVES INC.

1615 Monroe Avenue, N.W., Grand Rapids 5, Michigan

WE SPECIALIZE IN MAKING

Super Sharp Super Honed!

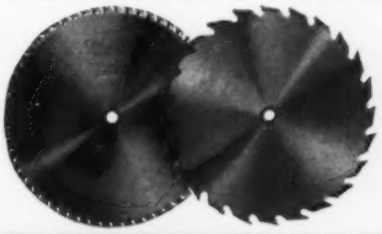
CONSISTENTLY ACCURATE

CARBIDE TIPPED SAWS!

Carbide tipped saws are not a side line with Meyers—it's our specialty. Each carbide tip has an extra fine grit, diamond honed, lapped edge for razor keen sharpness . . . for smooth cuts . . . for long life. Fine saw-steel blanks are engineered for carbide tipping to give you that *extra* performance at *no* extra cost.

MEYCO MAINLINE: An extra quality, low cost, standard line of saws, 6" to 16" diameters, with the famous UNI-CHIP grind (alternating double bevel and raker teeth) at low, low prices.

MEYCO CUSTOM LINE: Finest quality carbide tipped saws designed to meet specifications required to solve YOUR special problems. Enjoy the production advantages of finest quality MEYCO saws at prices no higher than ordinary carbide tipped blades. Write for Bulletin No. 58



MEYCO W. F. MEYERS CO., Inc.
BEDFORD, INDIANA
A famous name in precision tools since 1888

or six digits .166" high, white on black. Pneumaticounts are in full production and available for immediate delivery. **Manufacturer: Pneumaticount, 3400 N.E. 54th Ave., Portland, Oregon.**

Use postpaid card. Circle No. 35

Magnetic Memory System Has Many Lumber Mill Applications

A simple and rugged magnetic memory system with wide lumber industry applications on grade marking, trim saw control and lumber sorting has been announced by Republic Electric & Development Co. of Seattle. Named the Magnestat Memory System, it provides automated control of grading, sorting, stamping or trimming operations on conveyed materials.

Magnestat Memory System provides automated control of grading, sorting, stamping or trimming operations on conveyed materials.

Heart of the Magnestat is a reliable magnetic memory disc turning in synchronization with the product flow. The disc records control decisions, made manually by push-button console or automatically by limit switches, as magnetic impressions. A decision can be made at one point in the production line and then stored on the magnetic disc to be automatically executed at the proper stage later in the production line.

Typical applications of the Magnestat in the lumber field include its use in controlling grade marking equipment to meet new F.H.A. requirements, on sawmill trimmers, and lumber sorting machinery. In a typical application, the operator is stationed behind a simple push-button console making decisions as to grade, moisture, etc., as the rough-cut lumber passes him on a chain conveyor. He pushes a button while the board is in front of him to activate the grade marker or the correct saw in a battery of trim saws, or open the correct sorting gate, when the board reaches the selected position. Once this control decision has been executed, the magnetic area on the disc is erased, leaving a clean disc for continuous operations.

Manufacturer: Republic Electric & Development Co., 2627 Western Avenue, Seattle 1, Washington.

Use postpaid card. Circle No. 36

New Flow Coater Designed Especially For Ski Work

The Joyce Research and Development Corp., Valley Stream, New York, have announced the availability of a Burkle Flow Coater designed specifically for ski coating.

The new machine, designed to speed up production and effect saving in material, applies a uniform coat and is said to be capable of giving duplicate results with absolute accuracy. Savings of material may run as high as 40% since all losses common to spraying systems such as overspraying, overlapping, use of excess of solvents for sprayability, are eliminated. Savings in labor are also considerable, since unskilled labor can be used, the operation

Click's Veneer Tables

For Manufacturers, Dealers Anyone Who Works With VENEER, PLYWOOD, CUT LUMBER, BOXES, Etc.

A handy book of accurate tables for quickly determining square feet contents of veneer plywood and the cubic contents of logs, complete to fractional units.

Users tell us it pays for itself in a month in time saved and errors eliminated.

SEND FOR YOUR COPY TODAY
ONLY $10.00 POSTPAID

Fourth Edition Now Available

Mrs. A. Graham Click
Click's Veneer Tables
P.O. BOX W-147
ELKIN, NORTH CAROLINA

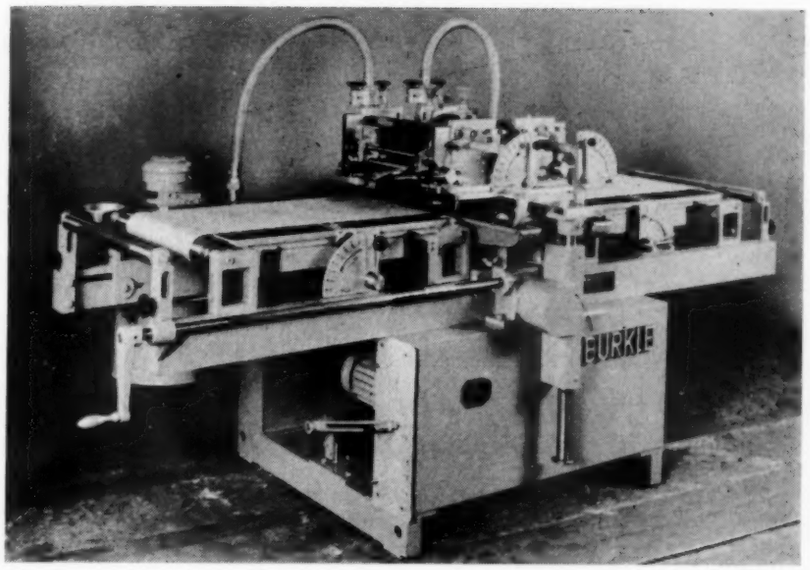
ReNew GIVES NEW LIFE TO SANDPAPER AND CUTS SANDING COST 50%

Keep your sandpaper cutting for you with ReNew. Apply . . . let it dissolve the pitch or resin . . . then brush it off with a scrubbing brush. It's so easy and quick and makes your sandpaper last at least 3 times as long.

ReNew increases sanding machine efficiency . . . paper lasts longer . . . less changes necessary. ReNew is non-inflammable.

We also have a complete line of maintenance paints. Write for prices.

MOLINE PAINT MFG. CO.
MOLINE ILLINOIS



of the flow coater is so simple. Conveyor is driven through a hydraulic variable speed transmission. Leading and trailing ends of conveyors have extra idle rollers to facilitate the transfer of pieces to and from the conveyor. Cleaning of the machine, or changing colors or materials is easily and quickly accomplished as all of the material can be removed through a single valve. Then the proper solvent is circulated through the machine and the orifice in the precision head is wiped clean. All electric motors and controls are explosion-proof for utmost safety.

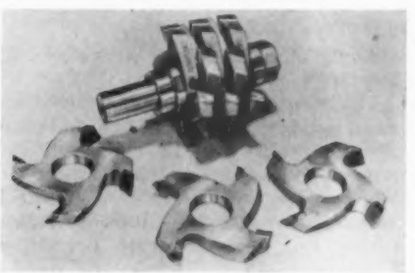
Manufacturer: Joyce Research and Development Corp., 249 West Merrick Rd., Valley Stream, New York.

Use postpaid card. Circle No. 37

4 Blade Helical Step Cutter Simplifies Wood Machining

A new 4 wing helical carbide tipped step cutter shapes most any types of wood. This new type of cutter uses the free machining characteristic of a 30° true helix angle, which in turn insures a constant positive rake angle throughout the entire width of the carbide blade.

The manufacturer states the cutters are staggered on the arbor forming steps, which give intermittent cuts allowing greater depths of cut, faster feeds, smooth finish and reduced machine spindle strain.



The most important feature reported is the amount of stock which can be removed in one pass, with thickness of stock cut limited only to the arbor

HANCHETT KNIFE GRINDERS

MODEL DN LOW PRICED

GUARANTEED PERFORMANCE

Capacity: 32" to 108"
Wheels: 10" to 14" Dia.
Table Drive — Timing Belt with Elec. Reversing Motor
Motor — 3 H.P.

Delivers the finest in knife Edges and high production at low cost

DEALER INQUIRIES INVITED

MODEL GK HEAVY DUTY

Capacity: 32" to 196"
Wheels: 14"—16"—20" Dia.
Motors: 3 to 15 Horsepower
Table Drives: Mechanical—Electric—Hydraulic
Precision Built—accurate—rugged and quiet

HANCHETT MANUFACTURING CO.
Main Office: BIG RAPIDS, MICHIGAN
West Coast: PORTLAND 1, OREGON

Does A MAN-SIZE JOB At Small Boy Cost...

Extra strong to carry heavy overloads . . . extra free rolling to move fast . . . Lineberry Factory Floor Trucks save labor and floor space. So solidly constructed, they require almost no upkeep and last so long they keep depreciation to the minimum. Happy users say they really do a Man-Size Job at Small Boy Cost. Ask for catalog. It's free.

LINEBERRY
FOUNDRY & MACHINE CO.
317 Forrester Ave. North Wilkesboro, N. C.

NEW AUTOMATIC PANEL CUTTER
is fast,
accurate, rugged

It rips and cross-cuts 0 to 8', at 16" per second, with 5 HP motor and up to 16" blade. ½ HP chain-driven carriage has instant electric brake at both ends of the stroke. Arbor raises by air control and may be dropped below table for return strokes. ½" hard die-stock table is 132" x 72". Send for complete information on panel cutter or complete line of saws, shapers, sanders, boring machines.

RODGERS MACHINERY MFG. COMPANY
2121 Belgrave Ave., Huntington Park, Calif. • Phone LU 7-2481
Quality Woodworking and Metalworking Equipment Since 1928

capacity of the machine on which cutters are run.

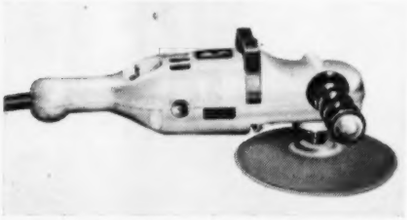
These cutters are designed for automatic shapers, hand shapers and profilers, but can also be used on other type machines having spindle speeds of 3600 rpm or more.

Manufacturer: Onsrud Cutter Manufacturing Co., Inc., 800 East Broadway, Libertyville, Ill.

Use postpaid card. Circle No. 38

Sanders & Polishers Have Many New Features

Budget-priced companion portable electric tools—a 7 in. disc sander and polisher—are completely new in every design and construction detail and have features usually found only in higher priced tools. Black & Decker Mfg. Co., reports that spiral bevel gears insure



efficient power transmission and smoother operation. Spindle, gears, and motor are mounted on heavy-duty ball bearings.

Compact, streamlined housings are of die-cast aluminum for light weight and strength. Front-end housing is flattened for better working clearance. Rear handle is ball-grip shaped to prevent slipping. "Foil-guard" side handle is reversible for right or left-hand operation. Molded plastic saddle tool rest prevents scratching or marring the work. Exhaust air—which insures a cool running motor—is deflected by the tool rest away from operator. Switch, mounted in a recess, cannot be turned on accidentally and is enclosed to protect it from dust.

Manufacturer: Black & Decker Mfg. Co., Towson 4, Maryland.

Use postpaid card. Circle No. 39

Chipper Knives Made From Special Tool Steel

A line of chipper knives for every make of chipping machine is manufactured from a special analysis tool steel by Simonds Worden White Company.

Each knife is individually processed during manufacture, from selection of raw steel to finishing and inspection, to assure the user of exact specifications. The special steel provides knives that are resistant to cracking, chipping, warping and abrasive wear.

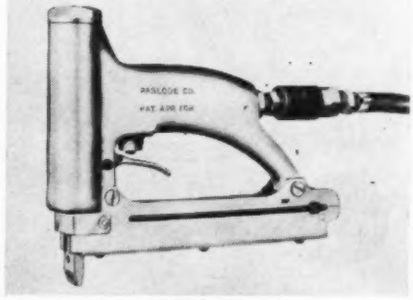
Manufacturer: Simonds Worden White Co., 1101 Negley Pl., Dayton 7, Ohio.

Use postpaid card. Circle No. 40

Compact Stapler Proves Highly Maneuverable

A bantam air powered stapler has been announced by Signode Steel Strapping Co. Shorter in height by ⅜" and lighter by ½ pound than its larger brother, the stapler features a well-balanced, hand-fitting design.

A high-speed nylon piston is used to obtain fast, recoiless action and improved work quality. A light touch of the trigger drives the stapler home from any angle.



The new Bantam takes both standard and wide crown staples, with leg lengths of 3/16", ¼", and ⅜".

Manufacturer: Signode Steel Strapping Co., 2600 N. Western Ave., Chicago 47, Illinois.

Use postpaid card. Circle No. 41

DO - IT - YOURSELF CYCLONES
SHIPPED K.D. 4 PIECES OR COMPLETELY ASSEMBLED

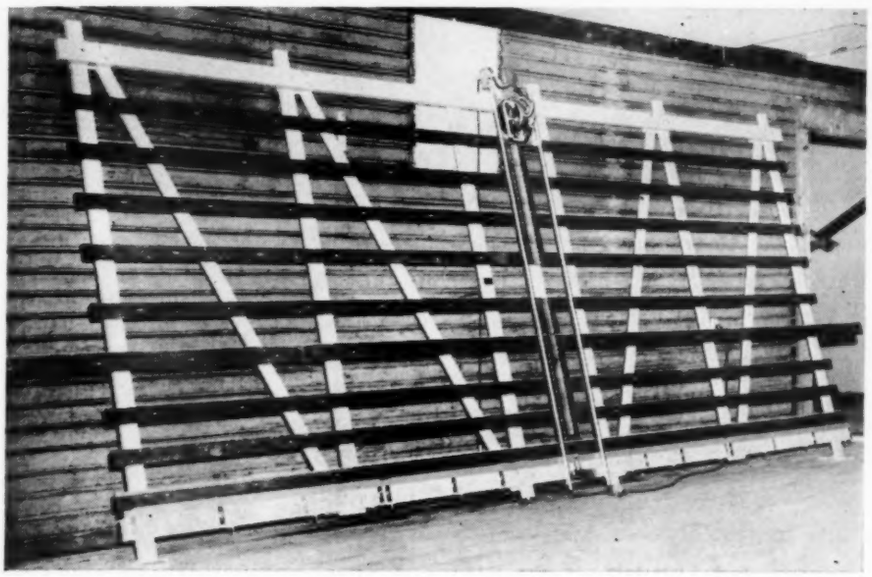
Steel supports or wall brackets available for all models.

36" diam.	4" or 5" inlet
40" "	5" " 6" "
48" "	6" " 8" "
60" "	8" " 9" "
70" "	10" "
75" "	12" "
80" "	14" "
84" "	16" "
92" "	18" "
95" "	20" "
102" "	22" "

- LARGER SIZES ON REQUEST
- AVAILABLE WITH RIGHT OR LEFT HAND INLETS

THE ALLINGTON & CURTIS MFG. CO. LEADERS SINCE 1886.
TOWERLINE RD., SAGINAW, MICHIGAN

8′ x 14′ Panels Cut on 2-Way Panel Saw



Distributors of pre-fab houses, utilizing the giant new 8′ x 14′ panels of Homasote in the construction of house components, are being greatly aided by this new special upright, space saving panel saw.

This 24′ long machine has an over-all height of 10′6″. Twenty-four inch extensions on each side provide horizontal scales extending 14′ each side of center, located about 28″ above the floor line. There are also provided on the bottom face board horizontal scales extending 12′ each side of the center. Approximately 100 nylon rollers are embedded in the face boards for easier movement of these large panels. The machine requires 48″ width of floor space. The motor is controlled by a foot switch.

All vertical framing members are in two pieces joined together with suitable steel channel splicers. This allows the machine to be crated for shipment in two packages of approximately equal height, and the passing of the crated machine through openings with low head room.

Manufacturer: Richard C. Bennett Mfg. Co., Laceyville, Penn.

Use postpaid card. Circle No. 42

Heavy-Duty Stapling Head, Air-Driven, Fastens Wood, Fibre

For heavy-duty service, a new self-contained, air driven PD stapling head offers unique features, according to the manufacturer. Suitable for independent mounting on a base or frame anywhere in the user's plant, the head does not require specially prepared wire stock or preformed staples. Instead, it instantaneously cuts, forms and drives its own staples direct from coils of standard wire available from open market sources, at competitive prices.

Driven by a pneumatic cylinder, it reduces initial costs, eliminating the need for electric motors, clutches, gear boxes and numerous precision actuating parts.

Heads may be mounted vertically or horizontally, and fitted to produce staples from ¼″ to 1″ maximum width,

BeVeG VENEERS

OUR BEST ONLY IN ALL FINE NORTHERN HARDWOOD FACE VENEERS

BIRDS EYE VENEER CO.
BOX 317 ESCANABA, MICH.

FREE Sample
Send request on your letterhead for liberal sample free. No obligation.

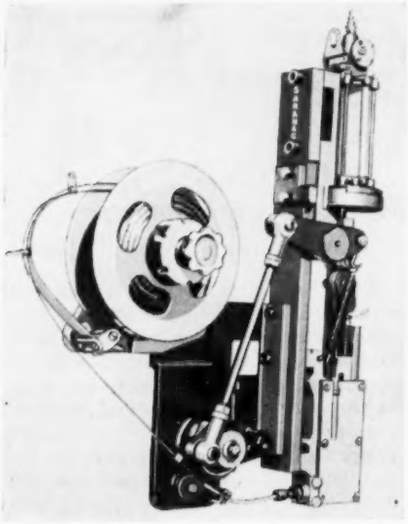
WOODWORKERS SAY: "Durham's Rock-Hard Water Putty covers up Nature's mistakes as well as our own. It handles beautifully—finishes smooth as velvet."

Durham's Water Putty has great strength and adhesion. This modern plastic fills knotholes or cracks, replaces chips, fills and smooths off edges of plywood, etc. *Absolutely does not shrink.* Comes in 25, 50 and 100-lb. drums in powder form—keeps indefinitely. Mix with water as needed. Send now for free sample and prices.

Donald Durham Co., Box 804-K, Des Moines 4, Ia.

The PLASTIC Repair Material in POWDER Form

or from ⅜" to 1½" staple leg length. Heavy-duty staples will penetrate materials to a total thickness of 1⅜" allowing for clinch.



They are suitable for stapling woods, plastics, fibre, paperboards, etc.

Applications include the fastening of furniture parts, crates, boxes, drums and other containers, toys, novelties, millwork, prefabricated home and trailer parts, etc.

Manufacturer: Saranac Machine Company, Benton Harbor, Michigan.

Use postpaid card. Circle No. 43

Kit For Making Cast Form Blocks

Form blocks for the Model 100 Molsander are made by casting directly over the molding in a new process developed by The Bouligny Company. Plastic-Steel form blocks are reported to outwear blocks made by conventional methods.

The Blocmold Kit consists of a cabinet, clamping fixture and rad ant oven. Other recommended materials include molding material and a roll of 6" wide tape.

The molding is prepared in a simple four-step process and then clamped in the fixture. The Blocmold is then mixed, poured and cured. Moldings are reusable.

Manufacturer: The Bouligny Co., Box 10158, Charlotte, N.C.

Use postpaid card. Circle No. 44

Saw Table Converts RH Blade Saws to Bench Type Circular

A new Skil universal saw table, Model 528, converts most Skil right hand blade saws into bench type circular models.

This all-steel table is standard 32" high with 22" x 22" top work area.

Special features include an adjustable clear plastic deflector said to protect the operator from sawdust or wood chips; a miter guide to make cuts from 45° to 90°, left or right; and an adjustable rip guide to mark rip cuts up to 10¼" wide.

The new universal clamping device quickly locks 10 Skilsaw models securely in position. Capacity is 3/32" less than the cutting depth of the saw used.

List price is $39.95 from Skil indus-

For cleaning metal, wood and plastic surfaces before painting. Order today through your supplier.

DETRO SALES CO., INC., *Culver City, California*

Standard of the Finishing Industry Since 1934

NELSONIZE to STABILIZE

Leader in Wood Stabilization

NELSONITE CHEMICAL PRODUCTS, INC.
900 MONROE AVE., N.W.
GRAND RAPIDS 2, MICHIGAN

PICKET POINTER

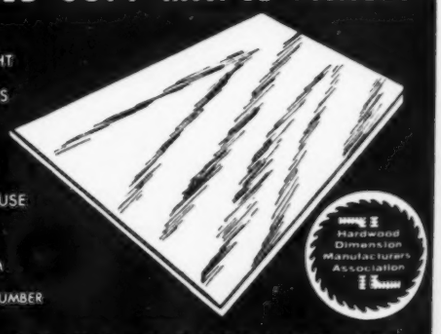
For square and oblong fence pickets. Three styles of gothic points, short, medium and long

Circulars on request

Woodworkers' Tool Works
224 S. Jefferson St.
Chicago 6, Illinois

EDGE GLUED SOFT MAPLE PANELS

FLAT AND STRAIGHT
TIGHT GLUE JOINTS
SMOOTH FINISH
PROMPT SHIPMENT
ECONOMICAL TO USE

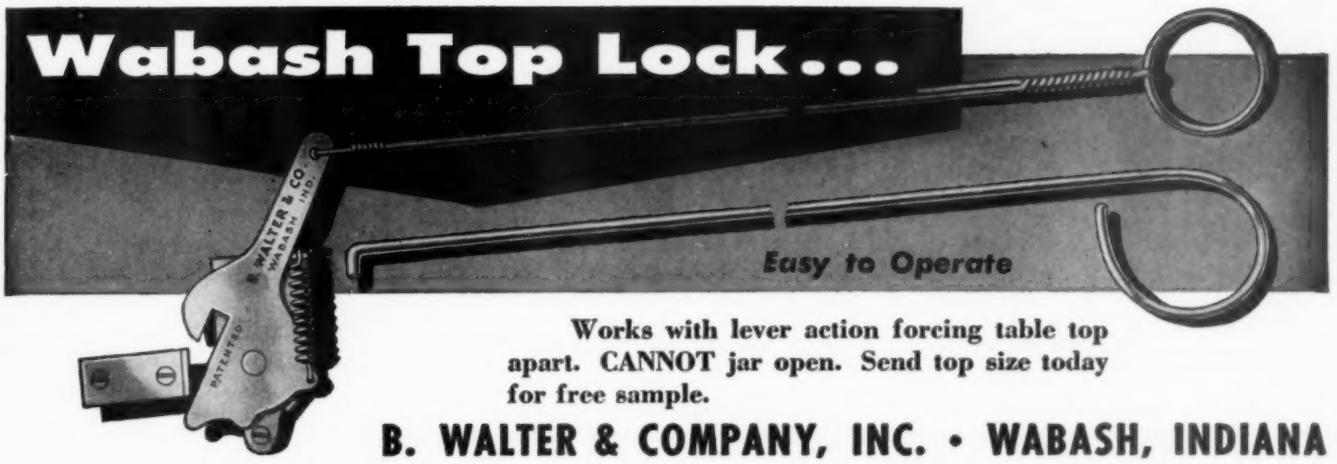


PRODUCED FROM
FAN-AIR SEASONED LUMBER

Hardwood Dimension Manufacturers Association

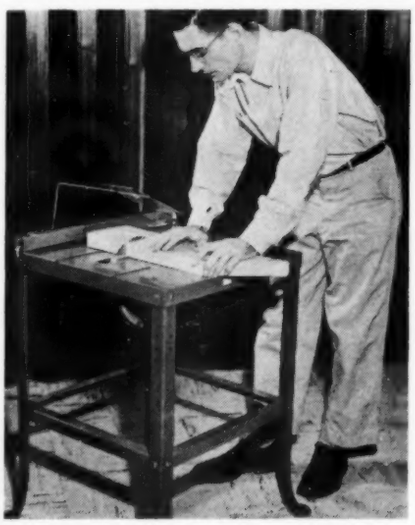
CARLTON SMITH INDUSTRIES, Inc.
P. O. BOX 4993 N. STA. • TEL. JA 6-6571 • MEMPHIS, TENN.

Wabash Top Lock...



Works with lever action forcing table top apart. CANNOT jar open. Send top size today for free sample.

B. WALTER & COMPANY, INC. • WABASH, INDIANA



trial distributors or from retail stores where Skil tools are sold.
Manufacturer: Skil Corporation, 5033 Elston Ave., Chicago 30, Illinois.
Use postpaid card. Circle No. 45

Higher Production, Increased Capacity Features of New 62" Heavy Duty Band Mill

An increase in the diameter of the wheels used on McDonough Manufacturing Co.'s new 62" Heavy Duty Band Mill permits the use of heavier gauge saws. The result is longer saw life and easier saw maintenance.

The larger wheels also result in higher production and larger capacity. A motorized top guide that permits extreme accuracies to be obtained is controlled by push buttons.

The wheel face is 9¼" for 10" wide band saws. Other features include fly-

wheel type lower wheel, heavy wheel shafts and bearings, and a super-sensitive knife edge saw strain.

The new band mill will slab logs up to 50" diameter, center split logs up to 38" and split cants up to 34" x 34".
Manufacturer: McDonough Mfg. Co., Eau Claire, Wis.
Use postpaid card. Circle No. 46

The second most important tool . . . for every woodworking shop

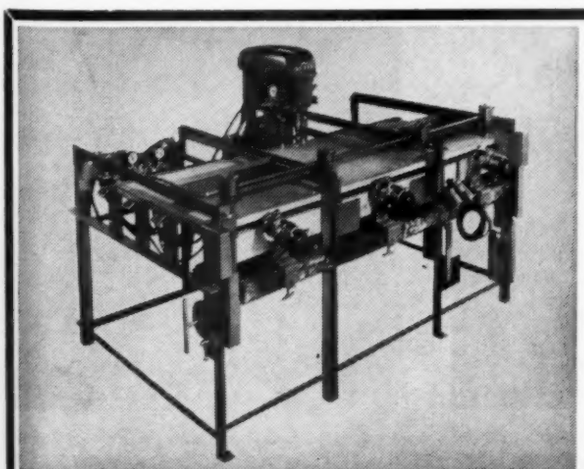
A VERSATILE
W&H
MOLDER-PLANER
is second only to a saw . . . it molds, planes and rabbets.

OVER 1000 PATTERNS AVAILABLE
FROM PINE PANELING TO FULL ROUND

12 new patented features. Safety Anti-kickback and guard make this one of the safest power tools available — Automatic Hold-Down. A low cost 3-in-1 tool: Planes up to 14" wide boards (7" each pass, reversing). Molds stock 1/8" to 8¼" in depth to a satin finish. Rabbets easily made. Set-up change-over made in minutes — makes the unit extraordinarily versatile. Models from $79.95 to $199.50 f.o.b., Milford, New Hampshire. A portable power tool that pays for itself on the first few jobs. "Your savings pile up as your shavings pile up".

41 Patterns of standard molding cutters available from stock.

For full details write:
WILLIAMS & HUSSEY MACHINE CORP.
CLINTON ST., MILFORD, NEW HAMPSHIRE



RUVO INTRODUCES A NEW PREHUNG DOOR ROUTING AND BORING MACHINE

Door and Both Jambs Machined
with Hinges Attached—In One Operation

FAST - FOOLPROOF - ECONOMICAL

RUVO ENGINEERING CO.
GLEN HEAD, LONG ISLAND, NEW YORK

Marketing Problems Draw DFPA Attention

The needs of a changing market and how to meet it received close scrutiny at the 24th annual meeting of the Douglas Fir Plywood Association held in June at Sun Valley, Idaho.

Executives of some of the nation's biggest plywood producers, beset with their own mounting marketing problems, heard speakers make these points:

- Theirs is the fastest-growing non-defense industry and, while production capacity currently is outstripping market needs, DFPA is marshalling all its resources in a research and promotion program designed to broaden existing markets—Henry C. Bacon, executive vice-president, Simpson Timber Co., who was re-elected as president of the plywood association.

- Listening "actively" to your customers instead of being preoccupied with marketing mechanics can often eliminate selling problems before they are created—William R. Dixon, general manager, Dow Chemical Co.

- Statistics are needed to tell you where you've been, but only marketing research can give a company an idea of where it's going—Richard J. Sargent, vice-president and general manager, portable appliance division, Westinghouse Corporation.

- Increased efficiency by the builder —which means more use of components —is the only way to offset increased costs in the home building industry. More research in this field is urgently needed—Alan E. Brockbank, chairman, research committee of the National Association of Home Builders.

- Components can do a job in home construction that nothing else can match. Proof of this is that two more dealers are adopting the Lu-Re-Co system every day—S. B. Slaughter, first vice-president, Lumber Dealers Research Council.

Bacon illustrated the industry's ability to expand its markets by the growth of softwood plywood use in home building. In 1950, he said, the industry was selling 400 square feet of plywood per new house start. In 1960, the estimate is for 2600 sq. ft. per new house start.

W. E. Difford, DFPA executive vice-president, pointed up the association's work in developing new components and in research aimed at producing a wider variety of products for the industry.

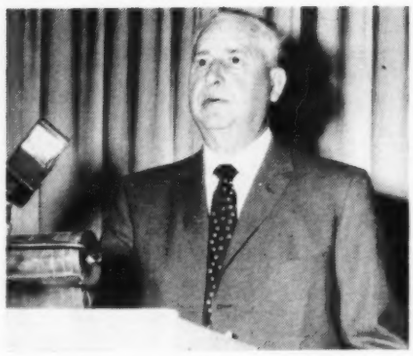
Officers Reelected

Officers reelected, along with Bacon, included J. H. Martinson, vice-president and general manager, Puget Sound Plywood, Inc., as vice-president; W. E. Difford, executive vice-president; Harrison Clark, secretary and H. A. Peterson, treasurer.

E. C. Dwyer, president of Dwyer Lumber Co., of Portland, Ore., was elected to fill the seat on the board of trustees vacated by F. L. Foval, sales manager, Long-Bell Division, International Paper Co., Longview, Wash.

Three board members were re-elected to two-year terms. They are Kenneth Ford, president and treasurer, Roseburg, Ore., Lumber Co.; George Raknes, general manager and sales manager, Centralia, Wash., Plywood, Inc., and George H. Weyerhaeuser, vice-president and manager, wood products, Weyerhaeuser Co., Tacoma.

Board members elected to one-year terms include J. L. Buckley, vice-president for development, Georgia-Pacific Corp., Portland, Ore.; John Connors, general manager, Brookings, Ore., Plywood Corp.; Howard Lemons, general manager, Westfir, Ore. division of Edward Hines Lumber Co., Chicago; J. H. Martinson, vice-president and general manager, Puget Sound Plywood, Inc., Tacoma, and K. L. Morrow, general manager, California division, U.S. Plywood Corp.



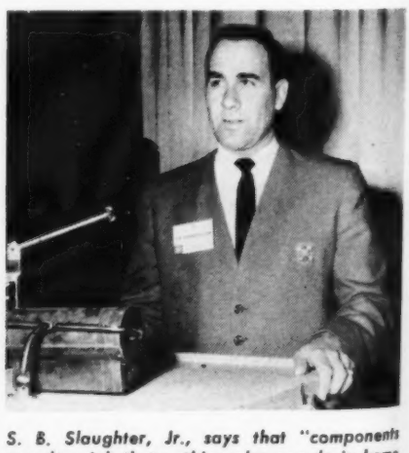
The part played by the Douglas Fir Plywood Association was clearly outlined by W. E. Difford.

C. Henry Bacon diagnosed marketing and production ailments and prescribed some cures.

"Are you listening?" challenged William R. Dixon. He advised his audience to listen to the rumblings from the market place.

Richard J. Sargent tells plywood men, "Statistics aren't enough. They tell only where you've been."

"More research is needed by home builders in permanent finishes and fasteners," said Alan E. Brockbank.



S. B. Slaughter, Jr., says that "components can do a job that nothing else can do in home building."

the market place *for*

- **SERVICE**
- **EMPLOYMENT**
- **USED and REBUILT EQUIPMENT**

RATES: $7.50 for name, address and a 5-line advertisement. Additional lines 75c. Display Advertising: 1" (minimum) $8.50; 2" $17.00; 3" $25.00. Additional inches, $8.00 per inch. Quarter pages and half pages available at regular space rates. Write for details. Closing date, 15th of month preceding publication.

FOR SALE

S. W. Harrington, Inc.

P. O. Box 230 **Asheville, N. C.**

Air Compressors, various sizes
Band Saws, New Delta 20" bb. dmd.
Bandsaws, New Moak 36" bb. dmd.
Blowers, Amer. 30" BB. BD.
Borers, Bell No. 19 Dbl. End. dmd.
Borers, Greenlee No. 369—6 ft. vert. 6 spdles. DMD.
Borers, Indiana 2 spdle horiz. dmd.
Borers, Andrews 3 spdle horiz. bd.
Borers, Andrews Sgl. Spdle. dmd.
Borers, Greenlee No. 370—5 Ft. 6 Spdle. Horiz. DMD
Borers, McKnight 88C, Chucking DMD
Borers, Moak & Pryble 2 spdle, horiz.
Clamps, Taylor 30 Sec. 6½ Ft. Cat. 6" Jaw Clamps
Clamps, Black Bros. 40 Sect. 8 Ft. Cat. 5 Clamps sec.
Clamps, Handy No. 71 revolving Case, Air Oper.
Clamps, Lancaster No. 100C Case
Clippers, Coe 88" bd and motor
Dovetailers, Dodds 10-15 & 20 Spdles
End Matchers, Yates E1 pb. bd.
Factory Trucks 4 wheels 30" x 60"
Frequency Changers, 75, DMD
Glue Jointer, Yates No. 213 & Jenkins 343-A, bb, dmd.
Glue Spreaders, Francis 12" Sgl. Roll, V-drive
Glue Spreader, Francis 60" SPD rub. rls.
Grinder, Buffalo 76" knife dmd.
Jointers, New Moak 12", bb. dmd.
Jointers, 8" and 16", 24" & 30" & 12"
Lathes, Mattison 57D bb. dmd.
Lathes, Whitney back-knife, BB, V-drive
Mortiser, New Britain No. 7 bd. & motor
Mortiser, W & M No. 284 Sgl. Spdle. bb. dmd.
Moulders, Amer. No. 35—10" BB, DMD
Moulders, Hermance 12" BB. BD & Motor
Moulders, Mattison No. 226—12" elec. dmd.
Moulders, Vonnegut 12" elec. bb. dmd.
Planers, Berlin 36" round belt dmd.
Planers, Buss No. 4—30" single bb, dmd.
Planers, Whitney No. 29—36" Sgl. bb. dmd.
Planers, Whitney 32A—30" Sgl. bb. dmd.
Planers, Whitney No. 32—24" Sgl. Surfacer bb, dmd.
Planers, Y-A No. 186, dbl. 20" DMD.
Planers, Yates No. 177 30" dbl. bb, dmd.
Planer-Matcher, Yates A1-15"x6" square heads, pb. bd.
Redrier, Merritt 12 plate 36 x 72
Resaw, F & E No. 186—42" bb. bd.
Resaws, Mershon 60" Band with 50 HP motor
Sanders, Jefferson Hand Stock dmd.
Sander, Pearson Sgl. Spdle. Vert. dmd.
Sanders, Oliver Scroll, DMD.
Sanders, Mattison No. 172 Edge belt, dmd.
Sander, Mattison No. 124 stroke
Sanders, McKnight 16 x 24 Sgl. Dr. dmd.
Sanders, Nash No. 25—10 spdle. dmd.
Sanders, Nash No. 24—6 Spdle. DMD.
Sanders, Niagara brush, bb. dmd.
Sanders, Oakley, Drawer, MD.
Sanders, F & E 60" 3-drum roll feed, dmd.
Sander, W & M No. 171 belt bb. dmd.
Sanders, Yates S4 Edge belt bb. dmd.
Saws, Amer. No. 10 and F & E No. 500 T. Table Variety saws, bb. dmd.
Saws, Y-Amer. G77 Str. Line Rip bb. dmd.
Saws, Diehl No. 55 Str. Line bb. dmd.
Saws, Mattison No. 207—bb, dmd.
Saws, New Delta 12" tilting arbor dmd.
Saws, New Delta Radial
Saws, Wilkins-C No. 87 dbl. cut-off saw, 60"x100", BB DMD
Shapers, Whitney No. 389, double bb, dmd.
Shapers, Whitney Dbl. Spdle. MD BB
Shapers, New Moak single spindle, bb, dmd.
Taping Machines, Dennis No. 2
Tenon Heads, single and double end
Tenoners, Double End. Wilkins-Chal. No. 70 bb. dmd.
Tenoner Sgl. End. Famous dmd.
Motors, Electric, all sizes
McKnight 4CM boring & sawing

Many other items, send your inquiries

USED AND REBUILT MACHINES
PRICED FOR QUICK SALE FROM STOCK

Band Mill—Fay & Egan 54" ball brg., right hand, with carriage
Band Saw—Fay & Egan 30", 32" & 36"; Tannewitz 36"
Band Resaw—Berlin 44"
Blower—American 36"
Borers—vertical or horizontal, single and multiple; Walker-Turner radial
Clamps—Hayes door; glue; bar
Drill Press—Delta single spindle
Grinders—pedestal type dbl. end; 30" automatic knife
Hand Planers & Jointers—Fay & Egan 6" and 16"; Oliver 12"; Porter 12"; Porter No. 300 Facer Jointer
Lathe—Diamond 10"
Mortisers—American No. 20; Fay & Egan No. 509 and Greenlee No. 228 Hollow Chisel; New Britain No. 7 Chain; Bell No. 81; Gerr-Schmaltz vertical borer and mortiser
Moulders & Stickers—Fay & Egan No. 209; Mattison No. 229 all-electric; Hermance 12"; Fay & Egan No. 189 4-side; XL Moulder; American 6"
Planer—Jossia-Ross 24" 2-knife single; Buss P-4 30" single; 27" single
Planer-Matcher—Fay & Egan 6-6-6 Jr.; Fay & Egan No. 415
Planer-Matcher-Moulder—Newman 8-B
Rod & Dowel Pointers—Bignell; Fay & Egan No. 7 Rod
Routers—Stanley; Carter
Sanders—Yates No. 401 42" 3-drum; Yates No. 431 30" 3-drum endless bed; 18" single disc; Skilsaw hand belt
Saws—double cut-off; spur, chain, and self-feed rip; combination and variety; swing cut-off
Shapers—Fay & Egan No. 552 and No. 502 single; American No. 1; American No. 30 dbl.; Buss dbl., Whitney dbl., Gallmeyer-Livingston dbl., Sidney "Famous"
Tenoners—Greenlee No. 533; Fay & Egan No. 505
Trimmer—Oliver No. 3 Universal
Window Frame Machine—Smith & Phillips
Woodworker—Cordesman-Rechtin Universal

WILL PAY CASH FOR
Single Machine or Entire Plant. All makes, models, sizes
Write, wire or phone today!
FAY & EGAN CO. • tele. PL 1-0730
2023 Eastern Ave., Cincinnati 2, O.
Factory Rebuilt Machines

FOR SALE

Woodward Machinery Company

309 E. Second St. Cincinnati 2, Ohio

Band Saw; 36 in Buss with Mtr. $175
Borer; 6 sp 60 in Andrews BB MD $350
Borer or Drill; Sgl. vertical MD $75
Cutoff saw; Overhead swing $50
Cutoff saw; Holmes Lightning foot pedal $75
Glue Press; large cold $275
Jointer; band saw, Ripsaw & Mortiser BB all $300
Lathe; Wood 12-in. MD, $75
Molder; American 6 in 4 side $200
Planer; Parks 12 x 4 MD $175
Planer; American 24 x 7 Sgl $250
Ripsaw; Yates G-2 st liner $300
Saw, Variety with Motor $85
Stapler; Bostich $85
Wood worker; Crescent Universal, $250
Numerous other machines

REES REFUSE BURNER

SINGLE & DOUBLE WALL TYPES

Prefabricated for Easy Erection — No Heavy Equipment Required — Request Bulletin 38F

REES BURNER & BLOW PIPE CO.
P.O. Box 225 Memphis, Tennessee

REES BLOW PIPE MFG. CO.
2929 Fifth St. Berkeley, Cal.

Choose A
WILCO REFUSE BURNER
For Safe, Efficient
Year-round Refuse Disposal
Maintenance-free
Dependable—Economical

wilco machine works, inc.
Box 3897 HWD-2 Memphis, Tenn.
WH 8-4555

FOR PENNIES

1 car 6' hardwood stacking sticks 6¢ ea.
1 car 8' hardwood stacking sticks 8¢ ea.
Please phone or wire orders

GAIENNIE LUMBER
Shreveport, La. Phone 5-4261

USED DOWEL MACHINES
All makes and sizes
Factory Rebuilt Hawkers

Hawker Manufacturing Co.
1425 Keowee St., Dayton, Ohio

NEW & USED REBUILT

Bandsaws, planers, tenoners, mortisers, sanders, self-feed rip saws, clamps. Send for our complete stock sheet.

AMERICAN MACHINERY EXCHANGE
2044 W. Lake St. Chicago, Ill.

FOR SALE

660 Diehl Glue Jointer, No. 47510, 220 Volt, 60 Cycle, 3 Phase. Can be adapted to run at 7200 R.P.M. with a 120 cycle frequency changer.

Contact Mr. W. S. Trowbridge
BEMIS MFG. CO.
Ph. HO 7-4623 Sheboygan Falls, Wis.

FOR SALE

Borer, Root Style GM, sgl spdle, vertical
Borer, Root Style G-250, sgl spdle, vertical
Borer, Brookman, two spindle, horizontal, air operated
Borer Moak, two spindle, horizontal, air operated
Clamp, Black Bros. No. 200 sash & door, air operated
Clamp, Handy No. 944 door, air operated
Clamps, Handy and Buss portable, drawer
Clamp Carriers, Taylor, Palmer, Billstrom
Diehl No. 890 Tapeless Veneer Splicer
Frequency Changers, 20 KW, 25 KW
Jointer, Diehl No. 69 Veneer
Jointer, Jenkins 8' Saw type veneer
Jointer, Diehl No. 660 Chain Feed Glue
Jointer, Porter 20" hand, ball bearing, V-belt drive
Jointer, Porter No. 700 Surfacemaster 24", direct motor drive
Jointer, Porter Facing Planer with Jackson & Church feeder
Lathe, Mattison No. 66 automatic, hopper feed
Lathe, Oliver hand turning
Mortiser, Bell No. 80C chain, multiple head, air feed
Mortiser, Bell No. 80 hollow chisel, 6 spindles, air feed
Mortiser, Oliver No. 92-D hollow chisel
Moulder, Vonnegut 4" and 9", direct m.d.
Moulder, Mattison No. 276, 6", direct motor drive
Moulder, XL 4" x 2", ball bearing
Planer, Buss No. 208, 20", single
Planer, Buss No. 44, 30", single
Planer, Crescent 24", single
Planer, Whitney No. 29, 36", single
Planer, Yates-American J-18, 18", single, ball bearing, direct motor drive
Planer, Buss 36", double, motor drive
Planer, Greenlee No. 120, 30", 8-roll, ball bearing, direct motor drive
Planer, Whitney No. 33, 32", double
Planer, Whitney No. 24, 30", double
Planer-Matcher, Vance Model 67, belt drive
Presses, Handy & Francis sectional screw
Presses, Chas. F. Elmes hot plate, 40" x 40", 10 opening
Press, Francis 30" x 40" hydraulic cold
Presses, Farquhar hot plate, 20" x 20", 7 opening; 14" x 35", 10 opening
Router, Onsrud Type W-147E radial arm
Routers, Porter No. 600, No. 612
Sanders, Nash No. 10, No. 87 automatic
Sander, Curtis Model 8 hand stroke, belt
Sander, Jefferson hand block, belt
Sander, Oliver No. 185-D moulding type, bt.
Sander, Peerless flat bed
Sander, Yates-Americans S-333, 49", endless bed
Sander, Timesaver 50" top
Sander, Bouligny Model 100 Molsander
Saws, Buss, 86" double cut-off, hand feed
Saw, Bell No. 12B double cut-off and miter
Saw, Porter 43-J, 30" Hydracut Saw
Saw, Oliver No. 94-D cut-off
Saw, Mattison No. 202 straight line rip
Saw, Oliver No. 88-D tilting arbor, table
Saw, Yates-American B-89 tilting arbor
Shaper, Onsrud W-124, direct motor, with frequency changer
Shaper, Moak single spindle
Shaper, Whitney dbl. spdl., b.b., belt drive
Tenoner, Greenlee No. 534, single

Miscellaneous Machines: Roller Conveyors, Bell No. 50 dowel machine; McKnight corner block machine; Onsrud G-16 bit and cutter grinder; Spartan auto nailers. This is a partial list. We are adding to our inventory constantly.

Monical Machinery Co.
Box 185 Grand Rapids 4, Michigan
Phone: EMpire 1-2668

DESIRABLE SURPLUS MACHINERY

BAND RESAW
Yates-Am. V-54A, 54" R.H. roller brg. VB MD 40 HP

BORING MACHINES
Root GM, sgl. spdl., BB, MD
Root CH, 48x12-in. 6-spdl. vert. auto. hydraulic, m-dr.
Newton BA-600, 4-spdl. horiz. air operated, prac. new.

BOX MACHINERY
Morgan 2-head fastener driver, M-D, new
Saraanac No. 1 RA sgl. hd. Driver, MD
Morgan 18-T. 48" OB nailer, Comp. crucks, lubricator, m-dr.
Morgan 30-T 90"-79" OB Plyboard Cleater, Comp. chucks, MD, modern

CHAIR MACHINERY
Bell No. 8 gluer & driver, MD
Bell No. 24-S sgl. saw, bore, chuck

CLAMPS
Bell "Scald" B, 2-way, end, Air
Union Revolving Case, opens 56", air
Handy Cabinet clamp, 10" hi. jaws

DOVETAILERS
Dovetailer, Dodds 15 and 20-spdl. m-dr.

DOWEL MACHINERY
Bell No. 4-A, ¼ to 2" Cap. B.B. M-dr.
Bell No. 4-B, ¼ to 2½" cap B.B.

LATHES
Mattison No. 55-F, 30" auto. BB, M-dr.
Mattison No. 55—C. 30" auto. BB. M-dr.

MOULDERS
Mattison No. 276, 6" all elec. hopper
Smithway 6x2" elec. 3-phase
Woods No. 701—B, 12x6" 5-head, BB, M-dr.

ROUTERS
Ecco No. 434, traveling spdl. 5 HP
Porter No. 612, high speed, 2 HP
Yates-Am. Model U9, high speed, 3 HP

SANDERS
Curtis No. 43-R1, 10-ft. auto. stroke hydraulic belt sander, used 300 hours.
Mattison No. 138 B hand block, BB, MD
Oakley Model D 6-ft. hand stroke, MD
Nash No. 4 Dbl. belt dowel & rod
Nash No. 24—72" auto. 6-spdl. BB, MD
Newton E-30 osc. edge, MD
Yates S-4 non-osc. edge MD
W & M No. 275 hand block, BB, MD
Smith No. C-505B, 43" 3 drum end. bed., all elec. ammeters, like new
Smith No. 404C, 49" 3 drum, end. bed ball brg. MD
Yates No. 413, 31" 2-dr. end. bed, MD
Yates No. 401, 55" 3-drum roll feed, direct motor driven.

SHAPERS
Porter No. 200 single spindle, high speed
Porter No. 206 dbl. spindle, hi-speed, 5 HP. mtrs.
Moak No. 7 sgl. spdl. hi-speed

SURFACERS
American No. 1½, 24" Sgl. BB, MD
Buss No. 4A, 30" sgl. BB, MD
Greenlee No. 110 36" 6-roll, single, ball brg. motor drive.
Buss No. 88, 30x8" dbl., mic. roll and press bar, BB, M-dr.

SAWS
Jenkins No. 105A, 36x78" ch. fd. BB, MD
Mattison No. 202 Chain feed, BB, MD
Mattison No. 207 Chain feed, BB, m-dr.
Porter No. 43-20J Hydracut

VENEER MACHINERY
Back No. 22-D 50" dbl. glue spdr. M-dr.
Capitol 65" sizer clipper
Cardwell 114" Veneer Tenderizer M.D.
Diamond 34½" Veneer Cutter and Jointer
Lathes, Dryers, Presses, etc.

SERVING THE WOODWORKING INDUSTRY FOR THE PAST 65 YEARS

THE NOBLE MACHINERY COMPANY, INCORPORATED

924 Hayden Street **Phone Anthony 6183** **Fort Wayne 1, Indiana**
ON EASTERN STANDARD TIME

REBUILT AND USED MACHINES

BAND SAWS
Meak, Fay & Egan, Sidney 36 in. b.b., m.d.
Tannewitz RH 42-in. ball-brg. dir. motor-dr.

BORERS
Root GM foot-feed vertical single
Root G250 foot-feed vertical single
Greenlee No. 356 foot feed vert. single
Root G300 heavy duty hyd., vertical, single
Root CCXH 10'x22" double col. vert. univ. mult.
Root K power-feed horizontal, single

CARVERS
Porter No. 2MB & 5 MB ball-brg., sing. sp.

CLAMPS
Handy No. 151 chair clamp
Handy No. 70—78-in. Revolving case clamp
Handy No. 454, 10-ft. 2-way air sash-door.
Lancaster No. 800 Duncan Phyfe Leg Air Clamp
Taylor No. 90, 12', 12 sec. clamp carrier

DOVETAILERS
Dodds 15-sp., & 20-sp., spiral gear, m-d.

GLUE SPREADERS
Francis No. 3—12" roll, motor driven
Francis No. 280—48" plate, foot operated
Black No. 22 D—56" dbl. spreader, Var. speed

GRINDERS
Rogers B-26-60 32-in. automatic knife grinder
Standard 12-in. 2 HP double end pedestal type
U.S. 10-in. 1 HP double end pedestal type

JOINTERS
Meak 12" ball bearing, direct motor driven
American 20" & 24" ball-brg., motor driven

LATHES
Yates-American T-5, 46" B.B. auto. turning
Mattison No. 57B and 57D 42-in. auto. turning
Blount D-13, 12" x 8' hand turning, m-d.
Blount 12" x 25" four speed hand turning

MORTISERS
New Britain No. 2 chain saw, motor driven
Bell No. 80A multiple chain saw, 5 heads
Wysong & Miles No. 321 foot feed, hol. chisel
Wysong & Miles No. 284 auto. hollow-chisel
Wysong & Miles No. 288, 5-sp. horiz. d.m.d.

MOULDERS
Hermance 6-in. 4-side Model E, motor driven
American No. 3, 6" 4-side, motor driven
American No. 24, 12", 4-side motor driven

PLANERS
F & E No. 224, 24-in. ball brg. single, d-m-d.
Parks 12" 2 HP ball brg., motor driven

ROUTERS
Onsrud W-244 high speed electric

SANDERS
Curtis No. 63R1 hand block sander, d-m-d.
Oliver No. 190-D univ. scroll edge sander
Wysong & Miles No. 273 universal belt sander
Wysong & Miles No. 294 auto. stroke m-dr.
Mattison No. 124 auto. stroke sander, m-d.
Heath 24" 2-drum roll feed sander
Vonnegut SEM wide double end spindle sander
Pearson Model A Moulding Sander, m-d.
Lancaster No. 600 Drawer Sander, m-d.

SAWS
Porter A-43 5 HP cut-off saw
Bell No. 216 cut-off saw, motor-driven
DeWalt GE 5 HP radial cut-off saw
Beach No. 3 double-end cut-off saw, m-dr.
Yates-American No. 1 tilt table saw, d-m-d.
Oliver No. 173-B jig saw, motor driven

SAWS—CHAIN FEED
Diehl No. 55 & 75 chain feed rip, motor dr.
Mattison No. 207 chain feed rip, motor-dr.

SHAPERS
Delta single spindle, ball-brg., m-dr.
Beach No. 305 single spindle, m-d.
Whitney Nos. 134 and 139 double-spdl., m-d.

MISCELLANEOUS
Bell No. 8 gluer and dowel driver, mtor-dr.
Hawker No. 2 dowel machine ball-brg., m-dr.
Dennis No. 4 Veneer Taping Machine, var. feed
Power No. 6 single end tenoner, ball-brg., d-m-d
Black 20" x 73" sectional veneer press

B. M. ROOT CO., York, Pa.

VENEERS

HARD MAPLE—
From our Petoskey, Mich. Mill:

On Hand		*Per M Feet*
60,000'	1/24 x 21" Sound & Btr. RW	$10.
57,000'	26" Sound & Btr. RW	$12.
75,000'	31" Sound & Btr. RW	$14.
24,000'	34" Sound & Btr RW	$15.
132,000'	38" Sound & Btr RW	$15.
40,000'	49" Clear Natural RW	$25.
18,000'	62" Clear Natural RW	$30.

FOB Petoskey, Michigan

BIRCH—
From our Sault Ste. Marie, Mich. Mill:

On Hand		*Per M Feet*
182,000'	1/24 x 21" Sound & Btr RW	$ 8.
54,000'	34" Sound & Btr RW	$11.
77,000'	39" Sound & Btr RW	$12.
77,000'	48" Sound & Btr RW	$13.
77,000'	53" Sound & Btr RW	$14.
180,000'	64" Sound & Btr RW	$15.
207,000'	99" No. 2 Back RW	$13.

FOB Sault Ste. Marie, Mich.

James La Grand Lumber Company
504 Murray Building, Grand Rapids 2, Mich. Phone GLendale 9-0279
VENEER - PLYWOOD - LUMBER - DIMENSION PARTS

FOR SALE
Good Used Machines

Band Saw: 30" Hall & Brown No. 185, DMD.
Band Saw: 36" Y & F, with motor, V-Belt
Band Resaw: Mershon 46" Ideal & Motor
Cut-Off Saw: Y-A G-44—5 HP DMD.
Cut-Off Saw: Double Mitre, Dauber Bell, DMD.
Glue Jointer: Frank Diehl, Motor Drive
Glue Spreader: Frances 44" Dbl., no contact roll
Jointer: 30" Berlin, Babbitt Bearing
Mortiser: Chain, New Britain No. 2, with motor
Mortiser: Hollow Chisel Crescent, DMD
Mortiser: Hollow Chisel, Fay & Egan No. 379
Mortiser, Hollow Chisel: Greenlee No. 228
Moulder: Woods No. 131—9" B.D.
Moulder: 15" x 6" Inside, Yates No. 111 5 Head.
Moulder: 12" Y & F Belt Drive, Babbitt Bearing
Morgan 3 Head Corrugated Driver, M.D.
Planer: Sgl. Crescent No. P24—24x8" M.D.
Planer: Sgl. 30 x 7" Whitney Babbitt Bearing with motor.
Planer Sgl: Whitney No. 24, 24" x 7" Motor Drive Ball Bearing 20 HP for cylinder, 7½ HP for feed
Planer: Single 30" x 8" Y-A No. B-5 DMD.
Planer, Sgl. Whitney 30 x 7", Ball Bearing Head
Radial Saw: Delta 5 HP Floor Type, NEW
Rip Saw: Chain Feed, Yates G-2, M.D.
Radial Saw: DeWalt, 5 HP, 3 phase
Rip Saw: Chain Feed Y-A No. 67 DMD.
Rip Saw: Dependable No. 112, Roll Feed, M.D.
Sander, American 48" 3-drum roll feed
Saw, Cut-Off; Beach 6 ft. Roller Carriage
Saw Cut-Off Swing: H & A No. 5, with motor
Screw Driver: Auto. Cook & Chick type 200, M. D.
Shaper: Sgl. Spindle Northfield, DMD.
Shaper: Dbl. Spindle Advance, DMD.
Sticker, Sash & Door: 4" 3-side Wilkin-Challener, Ball Bearing Motor Drive
Sticker Door: Yates-Amer. No. CC-4, 2 hd. & Mtr.
Veneer Press: Francis 4' x 12' all steel, hand operated
Veneer Taper: Denniss with Motor
Stile & Rail Borer: Hayes 4 Spindle & Motor
Tenoners: Sgl. End American No. 1, H & B No. 55

CALL—WRITE—WIRE

McDONALD MACHINERY COMPANY
1535 N. Broadway St. Louis 6, Mo.
CE 1-9360

REBUILT - PROMPT DELIVERY

YATES No. 74—42" Auto. Turning Lathe, B.B. DMD—with Hollow Chuck
YATES-AMERICAN S33—43" Heavy Duty fully motorized Endless Bed Sander. One of the finest woodworking machines ever manufactured.
WHITNEY No. 24—24" Double Cabinet Planer; ballbearing; motorized with complete equipment.
WHITNEY Double and Single Spindle Electric Shapers; used WITHOUT Frequency Changer.
NASH No. 10—Six Spindle motorized spindle sander.
POWERMATIC Hydraulic-Electro Chain Mortiser.
OLIVER 122—24" Power Feed Facing Planer, complete with HERZOG Finger Jointer; electric-motorized complete on sub-base.
GREENLEE No. 371 type 66" Double Column Wide Range Vertical Borer; any number of spindles.

EDWARD B. MUELLER COMPANY
5320 Montgomery Road
Cincinnati 12, Ohio
JE 1-0582

YOU CAN RELY ON MACHINES FROM BUCKEYE

BANDSAWS
FAY & EGAN No. 50, 36" Ball Bearing M.D.
FAY & EGAN No. 50—36 B.B. M.D.
FAY & EGAN No. 50—36 Babbitt Bearing
WALKER TURNER 16" M.D. Saw

SAW TABLES
WALLACE Tilting Arbor M.D.
FAY & EGAN No. 330 BB Tilt. Table

JOINTERS
PORTER 20" Round Head Plane Bearings
CORDESMAN 12" Round Head BB—MD

TENONER
FAY & EGAN 505—Motors Single End

RADIAL SAWS
DEWALT 7½ HP
WALLACE 2 HP

MISCELLANEOUS
DOIG Corrugated Fastener Driver
BLOWER M.D. 10" Opening
LATHE Student 42" Centers D.M.D.
SPINDLE SANDER Fay & Egan Dbl. Spindle
LOCK CORNER CUTTER Delta Disc Sander
FOLEY Saw Sharpener
BEACH Sander 36" Single Drum

MANY OTHER ITEMS AVAILABLE
Write—Wire—Call

BUCKEYE WOODWORKING EQUIPMENT CO.
550 W. McMicken Ave. Cincinnati 14, O.
MAin 1-2159

FOR SALE

A wood working plant in Appalachian Territory consisting of 28 acres of land, office building, two dry-kilns-175 M feet capacity, boiler room with new stoker fed boiler, private railroad siding, two fork lift trucks, machinery, lumber inventory.

This is a going concern with a $190,000. tax loss.

Write Box 855
c/o Hitchcock's Wood Working Digest
Wheaton, Illinois

PRICED FOR QUICK SALE

STEAM TURBINES

1— 625 KVA
1—1250 KVA
1—3750 KVA

All Westinghouse 3 phase, 60 cycle complete with condensers, pumps, valves and pipes. Priced right. Must move soon.

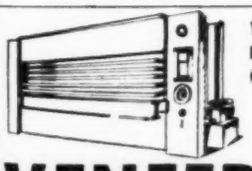
FRANK STEVENS ELECTRIC CO., INC.
325 E. Calhoun Ave. Memphis 5, Tennessee

DUCTS

For Heaters, Ventilation-Exhaust
6" x 12' Herman Nelson ea $7.50
14" x 20' Spiral Tube ..ea $15.00
Wire Lined — Canvas Covered-Flexible-New 3-3/4 Aluminum Flexible Tubing—ft. $1.00
Other Sizes Available, Gov't. Sur.

HARRIS MACHINERY COMPANY
501 30th Avenue S.E.
Minneapolis 14, Minn.

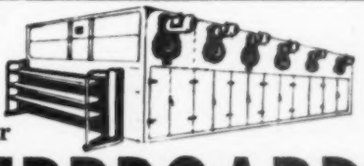
Quality, Kiln Dried
HARDWOODS
for Cabinetwork and Trim
Craftwoods Division
GEORGE E. TOMLINSON CO., INC.
BOX 233 WINCHESTER 3, KY.



VENEER
PLYWOOD &
CHIPPBOARD
PRESSES

transatlantic machinery co.

DRYERS

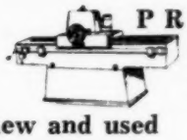


Complete heavy European equipments for

VENEER • PLYWOOD & CHIPPBOARD

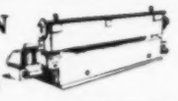
CLIPPERS

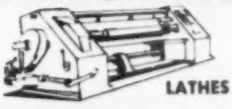
PRODUCTION



KNIFE GRINDERS

VENEER JOINTING





LATHES

Canada's largest stock in new and used woodworking machinery for Furniture and Sawmills.

ATTRACTIVE PRICES!

WRITE FOR LITERATURE

TRANSATLANTIC MACHINERY CO.
139—141 FRONT ST., E. TORONTO — EM 8-3884

MANUFACTURER RARE OPPORTUNITY

Prominent Miami Manufacturer of novelty furniture and accessories enjoying national distribution is seeking a manufacturer of case goods, tables, or related items operating a plant closer than ours to the raw material sources to produce, drop ship and invoice our line.

To arrange meeting, please write or wire immediately regarding your physical and financial capacity.

Box 684, North Miami Beach 62, Fla.

FOR SALE

Moulder, Mattison 229 8" B.B. Elect.
Moulder, Mattison 224 10" B.B. Elect.
Moulder, Mattison 222 6" B.B. Elect.
Moulder, Woods 133M 10" B.B. Elect.
Moulder, Newman 412 12" B.B. Elect.
Moulder Yates-Am. C89 10" B.B. Elect.
Moulder, American 35 6" B.B. Elect.
Moulder, Vonnegut 6" & 12" B.B. Elect.
Moulder Vonnegut Steel Frame 10" Elec.
Moulder, Hermance No. 50 & No. 60 Belt Dr.
Mortiser Bell No. 80 96" 12 heads Elect.
Planer & Matcher Yates-Am. A-20 20" Elec.
Resaw, Yates-American V-60 60" B.B.
Resaw, Mershon No. 54-C 54" B.B.
Saw, Diehl No. 750 Straight Line
Saw, Diehl No. 75 Straight Line
Saw, Diehl No. 55 Straight Line
Saw, Mattison 202 Straight Line
Saw, Diehl No. 909 Gang Rip 10" Arbor
Saw, Hermance No. 300 Gang 6" Arbor
Saw, Yates-Am. G-50 Gang 18" Arbor
Saw, Newman No. 37-A Gang 6" Arbor
Saw, Oliver No. 15 38" Band Scroll
Sander, Smith No. 404-B 42" Endless Bed
Sander, Yates-Am. 431 43" Endless Bed
Shaper, Whitney No. 135 & No. 150 Doubles
Shaper, Whitney No. 299 Automatic S.S.
Surfacer, Greenlee No. 110 36" Single
Surfacer, Greenlee No. 105 30" Single
Surfacer Yates-Am. No. 177 30" Double
Surfacer, Buss No. 4 44" Single
Double End Boring-Saw-Chuck McKnight 4-CM

R. K. HASKEW & CO., INC.
Box 4065 Chattanooga 5, Tenn.
Phone AMherst 6-6214

FOR SALE

Borer, W&M No. 283-B Slid. Spindle 2 Sp.
Borer, Root GM Slid. Spindle 2 Sp.
Dowel Machine, Hawker No. 3 BB 3" Cap.
Dowel Machine, Bell No. 4A, 2" Cap.
Hog, Gruendler No. 3S22 BB DMD 75 HP
Hog, JayBee Type F for Shavings
Hog, M&M No. 5 BB V Faced Sawmill, DMD 60 HP
Jointer, Porter No. 300-C 16" 4 Kn. 5 HP DMD
Gluer & Driver, Bell No. 8 DMD
Cutter & Pointer, Bell DMD
Moulder, American No. 35 9" x 4" Elec.
Moulder, Woods No. 137-M 6" Hopper Fd.
Moulder, Woods No. 134-M 10" Lag Bed
Moulder, Woods No. 132 10" x 4" BB BD
Planer, Dbl. Buss 8A 30" DMD
Planer, Sgl. Buss 4A 30" DMD
Saw, Gang Rip, Dependable No. 114 12" 30 HP
Saw, Glue Joint, E-C Model E
Sander, Nash No. 21 10 Sp. 16"
Sander, W&M No. 309 30" Disc. & Osc. Sp. DMD
Shaper, Porter No. 206 2 Sp. 5 HP motors
Shaper, Beach No. 305 1 Sp. 2 HP

BOSHCO, INC.
200 BOSTON AVE MEDFORD 55, MASS.
Phone: EXport 5-4010

Wm. K. Stamets, Jr.
Registered Mechanical Engineer

GENERAL ENGINEERING PROJECTS

COLUMBIANA, OHIO IV 2-2503

Detailer-Draftsman experienced on production store fixtures or production furniture for aggressive modern plant. Top salary for a top man.

RIEDER BROTHERS
4801-R Merion Avenue
Philadelphia, Penna.

FOR SALE

W125 Onsrud Automatic Shaper, 72" table—12½ H.P., equipped with 8-Onsrud Station clamps—Center clamp—Clampholders for 2 Stations, Hoses, Wrenches, etc.

Also do service work and manufacture Air Clamps for Automatic Shaper & Hand Shapers, Write for Bulletins.

KARL GUSFRE
2525 17th Ave. Gulfport, Miss.
Phone: UN 4-3025

MILLWORKING DEPARTMENT MANAGER

Leading builder of wood lapstrake boats offers challenging position to well grounded, imaginative, millworking specialist.

Experienced in devising efficient production methods from prints or drawings, set-up and maintenance of woodworking machinery, production scheduling, and purchase and grading of lumber desired, as well as knowledge of modern supervisory concepts.

Northwestern Wisconsin location; benefits; congenial, progressive management. Salary open!

Send complete background information and salary requirements. All applications will be kept confidential and each will be acknowledged.

Write Box 853
c/o WOOD WORKING DIGEST
Wheaton, Illinois

HARDWOOD LUMBER INSPECTOR

Lumber inspector for Tidewater, Virginia area. Experience with mahoganies and other tropical wood useful. Permanent position.

Write Box 851
c/o Hitchcock's Wood Working Digest
Wheaton, Illinois

EXECUTIVE AVAILABLE

Age 34, Family, Experienced General Management and Multi Plant Management in Wood and Metal Furniture. Industrial and Electro-Mechanical Engineering. Consulting. Desires Challenging Position North America or Europe.

Write Box 859
c/o Hitchcock's Wood Working Digest
Wheaton, Illinois

Foreman Wanted

Experienced foreman wanted for well established pallet plant in Central Indiana. We have an experienced hardworking crew that will produce with the right supervision. Man hired must be able to get maximum production with a minimum crew. State salary expected, experience and age. Must be sober.

Write Box 861
c/o Hitchcock's Wood Working Digest
Wheaton, Illinois

Please Mention Hitchcock's WOOD WORKING DIGEST When Writing Our Advertisers

readers' service

AVAILABLE WITHOUT CHARGE TO OUR READERS

If you will list below the woodworking machines, supplies or machine shop equipment in which you are interested and mail this page to us, we shall be glad to refer your needs to the manufacturers or others in position to serve you. Replies will come from them—not from us.

If you have any special shop problems, let us have the details. Often we can make helpful suggestions.

WE ARE IN THE MARKET FOR .....

.....

.....

NAME .....

ADDRESS .....

Please Check ☐ USED EQUIPMENT ☐ NEW EQUIPMENT

MAIL TO

HITCHCOCK PUBLISHING COMPANY
Phone MOntrose 5-1000 WHEATON, ILLINOIS

Sutton GUARANTEED

Best Buys in Woodworking Machinery

We are exclusive representatives in the entire States of Virginia, North Carolina, South Carolina and Eastern Tennessee for the following firms: Baxter D. Whitney & Son, Inc.; S. A. Woods Machine Company; Mereen-Johnson Machine Company; The Oakley Company; Adamson United Company; Sheboygan Machine Company; Union Tool Corporation; Joyce Lumber Lifts; Redco Tool Grinders; W. B. Mershon Company.

BORERS

Greenlee 4 ft. No. 369 direct mtr. driven ball bearing vertical Gang Borer
Greenlee No. 356 Direct Motor Driven Ball Bearing Vertical Single Spindle Borer

JOINTERS

2—Yates-American 6" No. 1 direct motor driven ball bearing Hand Jointer
Yates-American No. 213 Direct Motor Driven Glue Jointer
Yates-American 30", No. 1 Direct Motor Drive Jointer with Four Post Herzog Feeder
Diehl No. 660 direct motor driven ball bearing glue jointer
Porter 6" direct motor driven ball bearing Hand Jointer

LATHES

Yates 42" No. 74 ball bearing motor driven automatic turning lathe

MOULDERS

Mattison 10" No. 229 electric moulder
Yates-American 10" C-89 Electric Moulder
Yates-American 9" No. 35 Electric Moulder
Mattison 6" No. 276 electric moulder
Newman 10" No. 412 Electric Moulder
2—Vonnegut 6" Electric Moulder, hopper feed

PLANERS

Buss 30" Direct Motor Driven Ball Bearing Single Planer
Whitney 36" No. 29 direct motor driven b.b. Single Planer

SANDERS

3—Lancaster drawer sanders
Two Motored Drawer Sander
Mattison No. 124 Auto. Stroke Sander
Timesaver 24" Sander
Wysong & Miles No. 171 direct motor driven ball bearing belt sander
Wysong & Miles 603 Automatic Stroke Sander
Yates-American 43" No. 431 Direct Motor Driven 3-Drum Endless Bed Sander
Yates-American 31" No. 413 Direct Motor Driven 2-Drum Endless Bed Sander
Yates-American 43" type S23 direct motor driven roll feed sander

SAWS

Yates-American No. GG-3 direct motor driven ball bearing roller table double cut-off saw
Yates Type F-25 Variety Saw
Yates-American G44 straight line cut-off saw

SHAPERS

Greenlee 180B Belted Motor Driven High Speed Ball Bearing Shaper
Onsrud No. W125 Auto. Shaper
Whitney No. 282 Single Spindle Electric Shaper
Whitney No. 234 electric double spindle shaper
2—Whitney No. 134 Double Spindle Electric Ball Bearing Shapers
Whitney Latest Model No. 299 Single Spindle Auto. Shaper

TENONERS

American No. 1 Single End Tenoner
Fay & Egan No. 505 electric single end tenoner
Greenlee No. 545 Ball Bearing Double End Tenoner
Mereen-Johnson Practically New No. 300 Panel Sizer with Copes
Wilkin-Challoner No. 620 Electric Panel Sizer with Copes

VENEER MACHINERY

65" Capital motor driven clipper
Dennis Model 3 Taping Machine
Francis 84" motor driven double roll resinous glue spreader
Taylor Glue Spreader for Panel Flow
Black Brothers 64" No. 22D double roll resinous glue spreader
Union 72" motor driven double roll resinous glue spreader

MISCELLANEOUS

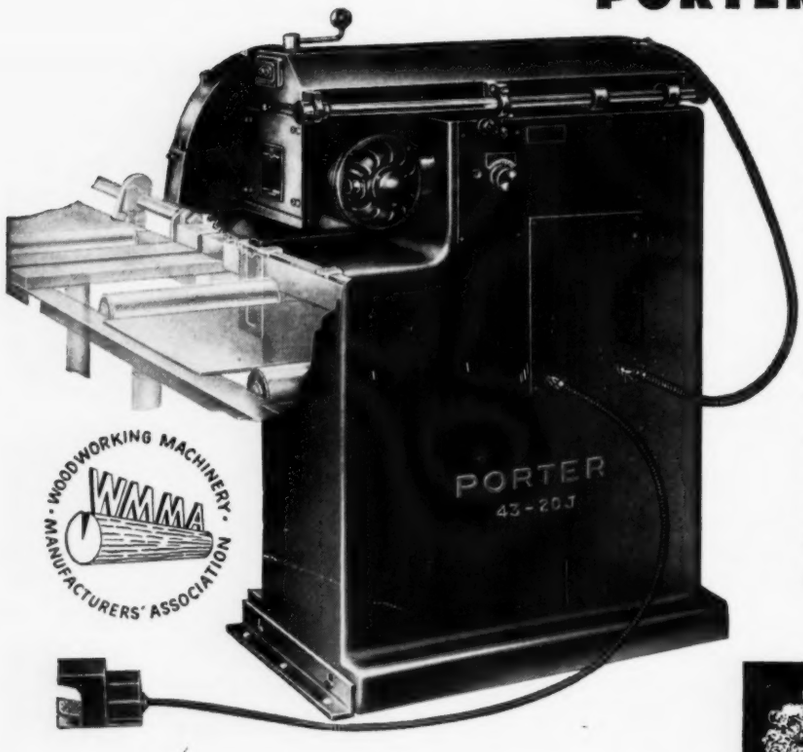
Diehl No. 77 Waterfall Grooving Machine
1—Porter Spindle Carver
Plycor continuous-feed lumber edge gluing machine

Sutton WOODWORKING MACHINE CO.

PHONE CYPRESS 9-5851 **SEDGEFIELD INN** **GREENSBORO, N.C.**

.....like butter!

You get "effortless cutting" with a PORTER HYDRACUT SAW



The Porter 43-20J Automatic Hydracut Saw with foot pedal control permits top production at lowest operator fatigue factor. Here's where the human efficiency element is held to the most desirable point for you—operator simply positions stock, presses the electrically operated foot control, and this heavy-duty Porter 43-20J performs with the smooth efficiency you'll find is always built into a Dividend Designed Porter saw. Automatically the hydraulically-operated carriage carries the saw blade through the cut . . . automatically it returns to position. Quick adjustment of stroke lengths and cutting speeds — from zero to 45 cuts a minute—allows cutting room production pin-pointed to your plant capacity.

For more complete specifications write for Porter Bulletin 43-20J.

C. O. PORTER
MACHINERY COMPANY
522 Plymouth Road, N.E.,
Grand Rapids 5, Michigan

!

AW

: Saw
oduc-
Here's
held
erator
ically
-duty
h effi-
Divi-
ly the
the
atical-
ent of
from
room
pacity.
write

ER
IY

n

g Digest

You are invited to use these

POSTAGE-FREE ACTION CARDS

FIRST CLASS
PERMIT NO. 272
WHEATON, ILLINOIS

BUSINESS REPLY MAIL
NO POSTAGE NECESSARY IF MAILED IN THE U.S.A.

POSTAGE WILL BE PAID BY

Hitchcock's WOOD WORKING DIGEST

READERS' SERVICE DIVISION

WHEATON, ILLINOIS

FIRST CLASS
PERMIT NO. 272
WHEATON, ILLINOIS

BUSINESS REPLY MAIL
NO POSTAGE NECESSARY IF MAILED IN THE U.S.A.

POSTAGE WILL BE PAID BY

Hitchcock's WOOD WORKING DIGEST

READERS' SERVICE DIVISION

WHEATON, ILLINOIS

FIRST CLASS
PERMIT NO. 272
WHEATON, ILLINOIS

BUSINESS REPLY MAIL
NO POSTAGE NECESSARY IF MAILED IN THE U.S.A.

POSTAGE WILL BE PAID BY

Hitchcock's WOOD WORKING DIGEST

READERS' SERVICE DIVISION

WHEATON, ILLINOIS

Index to Advertisers in This Issue

TO OBTAIN INFORMATION FROM ANY OF THESE ADVERTISERS, FIND THE BOLDFACE KEY NUMBER PRECEDING THE ADVERTISER'S NAME . . . AND CIRCLE THAT NUMBER ON ACTION CARD AT RIGHT

201—Adjustable Clamp Company 24
202—Alexander & Company, Inc., Walter 102
203—Arlington & Curtis Mfg. Company, The 108
204—Atlas-Thompson Corporation 86

205—Bee V Mfg. Company 63
206—Bell Machine Company, The 6
207—Bennett Mfg. Company, Richard C. 82
208—Beverly Mfg. Company 88
209—Birds Eye Veneer Company 109
210—Black Brothers Company, Inc., The 2
211—Borden Chemical Company, The 14, 15
212—Bruster Board Company 47
213—Buss Machine Works (A Subsidiary of Greenlee Bros. & Company) ..... Third Cover

214—California Redwood Association 74
215—Carr Fastener Company (United Carr Fastener Corporation) 59
216—Carter Products Company 24
217—Click, Mrs. A. Graham 106
218—Coggin Inc., Wm. B. 96
219—Curley Mfg. Company 83

220—Delmhorst Instrument Company 99
221—Delta Power Tool Division (Rockwell Mfg. Company) 41
222—Detroit Sales Company, Inc. 110
223—Diehl Machine Works Inc., The G. M. 55
224—Dixie Mfg. Company 103
225—Duo-Fast (Fastener Corporation) 16
226—Durham Company, Donald 109

227—Edmont, Inc. 104
228—Ekstrom, Carlson & Company 103

229—Fastener Corporation (Duo-Fast) 16
230—Fay & Egan Company 69
231—Foley Mfg. Company 17
232—Forest City Bit & Tool Company 75

233—Gamble Brothers, Inc. 98
234—Greenlee Brothers & Company 10, 11
235—Greenlee Tool Company 103

236—Hanchett Mfg. Company 107
237—Handy Mfg. Company 99
238—Hardwood Plywood Institute 75
239—Henry County Plywood 82

240—Irvington Machine Works 97

241—Jacksonville Blow Pipe Company 88

242—Knape & Vogt Mfg. Company 91
243—Koch Sons, Inc., George 63

244—Lancaster Inc., J. M. 87
245—Lineberry Foundry & Machine Company 107
246—Lodge & Shipley Company, The 67

247—Masonite Corporation 18, 19
248—Mattison Machine Works ..... Fourth Cover
—Mereen-Johnson Machine Company 76
249—Meyers Company, Inc., W. F. 105
250—Moisture Register Company 70
251—Moline Paint Mfg. Company 106
252—Moore Dry Kiln Company 21

253—National Casein Company 7
254—National Detroit, Inc. 92
255—Nelsonite Chemical Products, Inc. 110
256—Newman Machine Company, Inc. 72
257—New Sanders & Polishers Corporation 89
258—Northfield Foundry & Machine Company 25

259—Oliver Machinery Company 1

—Pearson Sanding Machine Company 4
260—Peerless Saw Company, The 89
261—Perkins Glue Company 8
262—Ply Curves, Inc. 105
263—Porter Machinery Company, C. O. 118
264—Power Line Sales Inc. 23

265—Rockwell Mfg. Company (Delta Power Tool Division) 41
266—Rodgers Machinery Mfg. Company 108
267—Ruvo Engineering Company 111

268—Sand-Rite Mfg. Company 104
269—Saw & Knife Specialty Company, Inc., The 87
270—Sedberry, Inc., J. B. 99
271—Senco Products Inc. 71
272—Shakeproof Division (Illinois Tool Works) 13
273—Skil Corporation 57
274—Smith Industries Inc., Carlton 110
275—Smith Machine Company, H. B. 25
276—Soderhamn Machine Mfg. Company 3
277—South Central Hardwood Lumberman's Club 27
278—Southern Screw Company 64
279—Spotnails, Inc. ..... Second Cover
280—Standard Dry Kiln Company 23

281—Tannewitz Works, The 81
282—Taylor Mfg. Company, Inc., James L. 43
283—Tri-State Machinery Company 43

284—Union Tool Corporation, The 70
285—United-Carr Fastener Corporation (Carr Fastener Company) 59

286—Virginia Machine Tool Company 90

287—Walter & Company, Inc., B. 111
288—Wapakoneta Machine Company, The 66
289—Wardwell Mfg. Company 102
290—Washington Steel Products, Inc. 96
291—Weyerhaeuser Company 91
292—Whitney & Son, Inc., Baxter D. 84
293—Williams & Hussey Machine Corporation 111
294—Williams Patent Crusher & Pulverizer Company 95
295—Williams White & Company 9
296—Wisconsin Knife Works 93
297—Wood Company, R. D. 51, 52, 53, 54
298—Wood Fibreboard Company 12
299—Woodworking Machinery Manufacturers' Association 21
300—Woodworkers' Tool Works 74, 110

301—Yates American Machine Company 98

WOOD WORKING MARKET PLACE

American Machinery Exchange 113

Bemis Mfg. Company 113
Bochco, Inc. 116
Buckeye Woodworking Equipment Company 115

Fay & Egan Company 113

Greenale Lumber Company 113
Gustke, Karl 116

Harrington Inc., S. W. 113
Harris Machinery Company 115
Haskew & Company, Inc., R. K. 116
Hawker Mfg. Company 113

James LaGrand Lumber Company 115

McDonald Machinery Company 115
Medical Machinery Company 114
Mueller Company, Edward B. 115

Noble Machinery Company, Inc., The 114

Rees Blow Pipe Mfg. Company 113
Rees Burner & Blow Pipe Company 113
Rieder Brothers 116
Root Company, B. M. 114

Stamets, Jr., Wm. K. 116
Stevens Electric Company, Inc., Frank 115
Sutton Woodworking Machine Company 117

Tomlinson Company, Inc., George E. 115
Transatlantic Machinery Company 115

Wilen Machine Works, Inc. 113
Woodward Machinery Company 113

Handy Information Cards

THE three postpaid cards at the right are to help you obtain information about products advertised in this issue. The top two cards offer you a way to get information about any product. The bottom card provides key numbers for you to circle to get information about any new product item, free literature item or advertisement published in this issue. New product and literature items are numbered where they appear. For information about any advertisement, simply find the manufacturer's name in the Advertising Index above, note the boldface number preceding the name and circle that number on the Action card. Before sending the card, please check to see that you have included your name and address.

You are invited to use these

POSTAGE-FREE ACTION CARDS

AUGUST, 1960

For free information . . . use these postage-free Action Cards

Free Literature and New Products circle key numbers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90

Advertisements (See Ad Index at left for boldface key number to circle)

201	202	203	204	205	206	207	208	209	210	211	212	213	214	215
216	217	218	219	220	221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240	241	242	243	244	245
246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300	301	302	303	304	305
306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335
336	337	338	339	340	341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360	361	362	363	364	365

Name ..... Position .....

Company .....

Products manufactured ..... Approx. No. Plant Employees .....

Street .....

City ..... Zone ..... State .....

AUGUST, 1960

For free information . . . use these postage-free Action Cards

Free Literature and New Products circle key numbers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90

Advertisements (See Ad Index at left for boldface key number to circle)

201	202	203	204	205	206	207	208	209	210	211	212	213	214	215
216	217	218	219	220	221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240	241	242	243	244	245
246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300	301	302	303	304	305
306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335
336	337	338	339	340	341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360	361	362	363	364	365

Name ..... Position .....

Company .....

Products manufactured ..... Approx. No. Plant Employees .....

Street .....

City ..... Zone ..... State .....

AUGUST, 1960

For free information . . . use these postage-free Action Cards

Free Literature and New Products circle key numbers

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70	71	72	73	74	75
76	77	78	79	80	81	82	83	84	85	86	87	88	89	90

Advertisements (See Ad Index at left for boldface key number to circle)

201	202	203	204	205	206	207	208	209	210	211	212	213	214	215
216	217	218	219	220	221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240	241	242	243	244	245
246	247	248	249	250	251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270	271	272	273	274	275
276	277	278	279	280	281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300	301	302	303	304	305
306	307	308	309	310	311	312	313	314	315	316	317	318	319	320
321	322	323	324	325	326	327	328	329	330	331	332	333	334	335
336	337	338	339	340	341	342	343	344	345	346	347	348	349	350
351	352	353	354	355	356	357	358	359	360	361	362	363	364	365

Name ..... Position .....

Company .....

Products manufactured ..... Approx. No. Plant Employees .....

Street .....

City ..... Zone ..... State .....

INDEX TO PRODUCTS ADVERTISED IN THIS ISSUE

Abrasive Renewing Compounds, 106
Adhesives, casein, 7, 8, 14-15
Adhesives, contact, 14-15
Adhesives, hot pressing, 14-15
Adhesives, resin, 7, 14-15
Adhesives, resorcinol, 7, 14-15
Adhesives, urea, 14-15

Band Saw Tires & Wheels, 24
Bits, interchangeable, 35, 103
Bits, router, 87, 99
Blowers, 88
Boring Machines, 6, 10-11, 108, 111
Boring Tools, 103

Carbide Cutting Tools, 25, 87, 88, 102, 105
Clamping Machines, 6
Clamp Carriers, 43
Clamps, 6, 24
Conveyors, 49, 64, 70
Countersinks, 75
Cutter Heads, 102
Cutters, 87
Cyclones, 108

Dado Heads, 93
Dimension Stock, 91, 96, 98, 110
Dry Kilns, 21, 23
Dust Control Systems, 88, 103

Edge Banders, 99

Factory Trucks, 107
Fastener Driving Equipment, 10, 71, 83, Inside Front Cover
Fasteners, 13, 59, 64, 94
Finger Jointing Machines, 49
Finishing Systems, 63, 70

Gluers, 104
Glue Applicator, 43
Glue Room Equipment, 2
Glue Spreaders, 2
Grinders, knife, 107
Grinders, wood, 99

Hardboard, 18-19
High Frequency Bonding Equipment, 6, 67
Hogs, 95

Jointers, 28, 63, 72

Knives, 66, 87, 102
Knives, carbide, 87, 102

Ladders, 55, Back Cover
Lumber, 86

Machines, 72
Moisture Meters, 21, 70, 99
Molders, 55, 111
Mortisers, 8, 10-11, 72
Mortising Tools, 103

Nailing Machines, 83, Inside Front Cover
Nails, 83

Paper Machines, 106
Particle Board, 15, 47
Particle Board Systems, 3
Pickets Pointer, 110
Planers, 1, 10, 111
Plywood, 75
Plywood Parts, 82, 103
Portable Electric Tools, 57
Presses, hot plate, 9, 61
Presses, hydraulic, 51-52-53-54
Presses, laminating, 67
Presses, plywood, 51, 52, 53, 54
Putty, water, 109

Redwood, 74
Resaws, 49, 76
Routers, 101, 111
Routering Tools, 103

Sanders, belt, 41, 89, 96
Sanders, contour, 4
Sanders, disc, 41
Sanders, drum, 26, 98
Sanders, endless bed, 26
Sanders, orbital, 57, 92
Sanders, pneumatic, 104
Sash & Door Assembly Machine, 87
Saw Blades, carbide, 88, 105
Saw Blades, circular, 88, 105
Sawmills, 27, 83
Saw Sharpening & Setting Machines, 102
Saws, band, 25, 69, 81
Saws, cutoff, 49, 68, 74, 97, 118
Saws, panel, 49, 68, 82
Saws, rip, 55, 72, 82, 98, 108
Saws, sizing, 68
Saws, tilting arbor, 68, 69
Saws, variety, 25, 72
Screws, 13, 64
Services, saw sharpening, 17
Shapers, 10-11, 25, 49, 68, 84, 108
Shaper Steel, 66
Sharpeners, planer blades, 41
Stabilizers, wood, 110
Staplers, 16, 71
Surfacers, 25, 69, 72, 98, Inside Back Cover

Table Equipment, 111
Table Slides, 111
Tackers, 16, 71
Tack Rags, 110
Tenons, 59
Tenoners, 10-11, 72
Trays, 96
Trucks, 107
Turnings, wood, 96

Veneer, 86, 109
Veneer Dryers, 21
Veneer Tables, 109

Wood Parts, 91, 98
Wood Plastic, 88
Wood Preservatives, 110
Wood Working Machinery, all kinds, 24

District Managers

HITCHCOCK'S WOOD WORKING DIGEST

EASTERN DIVISION

Dan E. Reardon, V.P. in charge
c/o Hitchcock Publishing Co.
55 West 42nd Street
New York 36, N.Y.
Telephone: LAckawanna 4-4528

Home Address: Box 1,
South Glastonbury, Conn.
Home Telephone: MEdford 3-7083

NEW ENGLAND

John Pickering, Jr.
c/o Hitchcock Publishing Co.
Box No. 29, Holt Road,
Andover, Mass.
Telephone: GReenleaf 5-0499

NEW YORK, METROPOLITAN AREA, EASTERN PENNA. CENTRAL N. Y. STATE, N. J. MD., DELA., D. of C.

Ralph Payne
c/o Hitchcock Publishing Co.
55 West 42nd Street
New York 36, N. Y.
Telephone: LAckawanna 4-4528

Home Address: Box 1
New Providence, New Jersey
Telephone: CRestview 7-6166

CENTRAL DIVISION

INDIANA

Henry J. Smith, V.P. in charge
c/o Hitchcock Publishing Co.
Wheaton, Illinois
Telephone: MOntrose 5-1000

WESTERN NEW YORK, WESTERN PENNSYLVANIA, N.E. OHIO

James C. Stewart, V.P.
c/o Hitchcock Publishing Co.
Heights-Rockefeller Building
3107 Mayfield
Cleveland 18, Ohio
Telephone: YEllowstone 2-9885

MICHIGAN (EXCEPT UPPER PENINSULA)

William E. Jacobs
10432 W. McNichols
Detroit 21, Michigan
Telephone: DIamond 1-9525

ILLINOIS, WISCONSIN, IOWA, MINNESOTA, MISSOURI, SOUTH DAKOTA, UPPER PENINSULA OF MICHIGAN

John B. McCabe
c/o Hitchcock Publishing Co.
Wheaton, Illinois
Telephone: MOntrose 5-1000

CENTRAL AND SOUTHERN OHIO, KENTUCKY

Arthur V. Baumann
1410 Wynnburn Park Drive
Cincinnati 38, Ohio
Telephone: BLackburn 1-2987

SOUTHERN DIVISION

H. J. Smith, V.P. in charge
c/o Hitchcock Publishing Co.
Wheaton, Illinois
Telephone: MOntrose 5-1000

WESTERN DIVISION

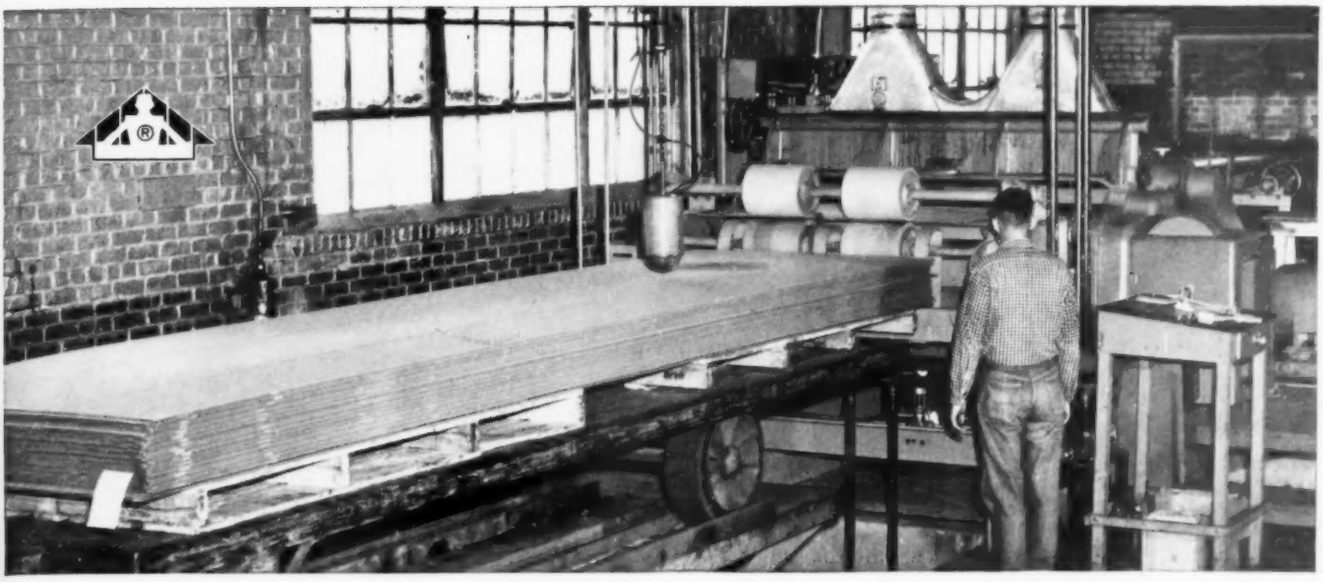
CALIFORNIA, ARIZONA

Keith H. Evans
3723 Wilshire Boulevard
Los Angeles 5, California
Telephone: DUnkirk 8-2981
and
Room 225—515 Market St. Bldg.
San Francisco 5, California
Telephone: YUkon 2-4280

OREGON, WASHINGTON

Lloyd Thorpe
766 Dexter Horton Building
Seattle 4, Washington
Phone: MAin 2-4363

HITCHCOCK PUBLISHING CO. • Phone MO 5-1000 • Wheaton, Ill.



BUSS 72" MICRO-SURFACER

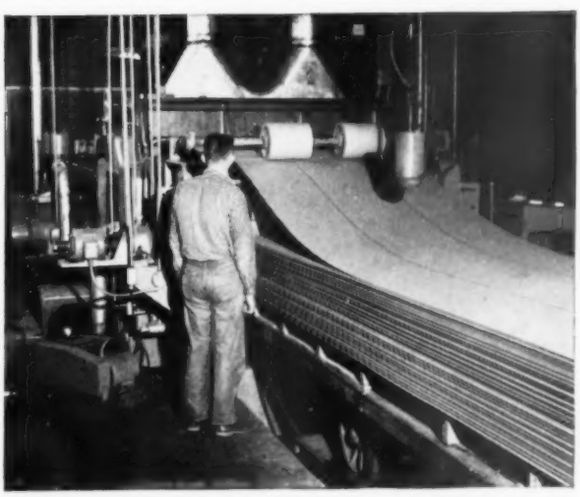
stays on the job at

MASONITE

'round the clock,

seven days a week!

This NEW Buss 72" MICRO-SURFACER, operating in Masonite Corporation's huge new plant at Laurel, Mississippi, was designed to surface their new wide board. It is capable of surfacing more than 11,000 sq. ft. of hardboard per hour, and tolerances of ± .002" are maintained at all times. Plant officials are well-pleased with its performance. For instance, they like the vacuum work table which holds thin, flexible material rigidly while planing. They also praise the water cooled platens which give close tolerance control of machine members. This machine is suitable for surfacing a wide range of sheeting materials. Let Buss help solve your sizing problems. Send in your material for production and tolerance testing.



PRECISION BUSS PLANERS

PLANER SPECIALISTS SINCE 1862

BUSS MACHINE WORKS, INC.

a subsidiary of GREENLEE BROS. & CO.

234 EIGHTH ST. HOLLAND, MICHIGAN

WMMA

"Mattison automatic lathe does top job on over 3000 patterns... permits us to turn and deliver in one day"

J. R. Carrick, President
Carrick Turning Works, Inc.
High Point, North Carolina

Low-cost turning is important to any woodworking operation, but for Carrick Turning Works it directly determines profit. Carrick is one of the largest plants in the country that devotes all of its production to turning. They deliver over 4,000,000 precision turnings a year from more than 3,000 patterns for the furniture industry.

One-day delivery from receipt of order is common for some patterns. All output is on special order and no turnings are produced for stock. Carrick can't afford anything but the best in turning lathes. They use 16 Mattison automatic lathes.

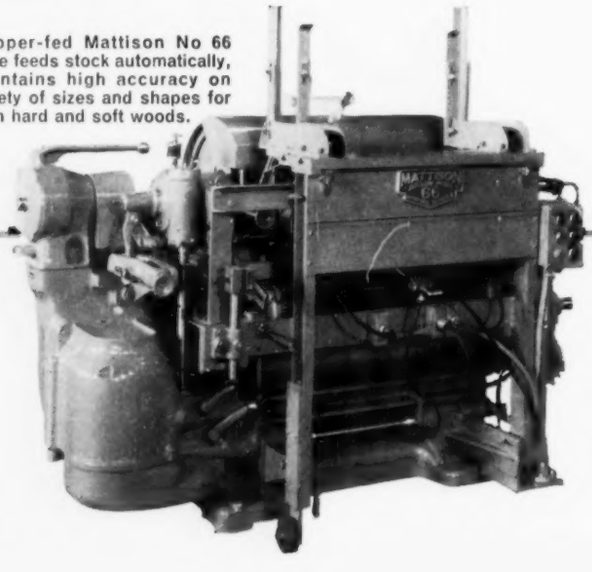
In describing his company's unique operation, J. R. Carrick comments, "Because we manufacture turnings only according to customer specifications, we have numerous patterns of various sizes and shapes, and continuously use hard and soft woods. The Mattison No. 66 does excellent work on all of these.

"We also find that there is less downtime because the knives stay sharp longer. This is because the cutters are automatically removed from the turning when the correct size is reached. There is no rubbing to dull the knives as with manually operated lathes."

If you need fast, precise wood turning with minimum supervision, the Mattison No. 66 automatic shaping lathe offers a direct opportunity to reduce turning costs.

Mattison No. 66 automatic shaping lathe handles stock from ¾" to 4" square and up to 30" long. One man can easily keep two lathes in operation simultaneously.

Hopper-fed Mattison No 66 lathe feeds stock automatically, maintains high accuracy on variety of sizes and shapes for both hard and soft woods.



MATTISON
MACHINE WORKS
ROCKFORD ILL. U.S.A.

MATTISON

WOODWORKING MACHINERY

"Built better... to produce better quality"